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A Fortnightly Newsletter from the Indian Pugwash Society

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- China praises Europe's efforts in Iran barter mechanism
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- China's Amb. calls on certain state party to stop blocking BWC negotiations
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- China's new PCL191 multiple launch rocket system casts shadow over Taiwan Strait
- China launches new optical remote sensing satellite
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- Cold testing completed at Pakistan's Karachi 2
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- U.S. lawmakers reach deal on massive defense bill, eye Russia, Turkey, China
- Pompeo says hopeful North Korea will keep commitments as Pyongyang deadline looms
- U.S. imposes new sanctions on Iran airline over proliferation
- After North Korea Hints at New Policy, U.S. Warns Against More Missile Tests
- U.S. tells U.N. it is ready to be flexible in North Korea talks, warns against provocations
- Roof placed over first Vogtle unit
- U.S. warns North Korea against 'ill-advised behavior' as deadline looms
- US: NKorea missile tests are 'deeply counterproductive'
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- SMR design review enters final phases
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- Europeans again condemn North Korea's missile launches
- Europeans Step Up Pressure on Iran Over Nuclear Violations
- Europeans, Iran to clash at nuclear talks as deal nears collapse
- Europe Cannot Afford to Cross Iran's Redline on Nuclear Issue
- Austria seeks to preserve nuclear deal: diplomat

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- Kremlin: NATO on Moscow's radar only when alliance threatens Russia
- Leningrad II plant begins providing district heating
- Russia awards contract to build BREST reactor,
- Putin says Russia ready to extend New START nuclear arms treaty
- Russia suspends revamp work at Iran's Fordow nuclear plant
- Putin fears the US and NATO are militarizing space and Russia is right to worry, experts say
- Three out of four icebreakers for Northern Sea Route may be decommissioned by 2030
- Russia suspends Fordow project in Iran
- Russia says will respond to U.S. on missile deployment
- Russian Foreign Minister Likely to Discuss Nuclear Arms With Trump and Pompeo
- Russia to test robot for radioactive waste disposal in early 2020
- Russia ready to consider US nuclear disarmament proposals - source
- Russia and Turkey plan grid connection for Akkuyu plant
- Orano to supply second Russian deconversion facility
- Press review: Lavrov, Trump hash over boosting business ties and arms control proposals
- Zaporozhe 5 loaded exclusively with Westinghouse fuel
- Russia raises concerns over new U.S. ballistic missile test: RIA
- Russia Developing Nuclear Arms Beyond U.S. Arsenal, U.S. Military Says
- US missile test confirms INF Treaty was ruined at Washington's initiative - Kremlin

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G. Iran

- Setting Iran deadlines 'might not be the best idea': new IAEA chief
- Iran says still ready for talks if US lifts sanctions
- Russia suspends revamp work at Iran's Fordow nuclear plant
- Iran working on nuclear-capable missiles: European powers
- Iran nuclear deal parties meet as accord nears collapse
- Iran President Rouhani may visit Japan on December 19 - Jiji
- IAEA chief vows to act fairly towards Tehran
- EU chief urges united stance to preserve nuclear deal
- US hopeful for Iran prisoner talks but imposes new sanctions

- Guterres says UN is unable to verify weapons used in Saudi oil attack were from Iran
- IRGC chief: It is wrong to think Iranians will surrender under increasing economic pressure
- Iran can give response if attacked: Nasrallah
- Resolution 2231 imposes no ban on Iran's missile tests: spokesman
- Malaysian PM calls U.S. sanctions on Iran a 'form of dictatorship'

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- Iran's threat to the region can no longer be tolerated: Al-Jubeir

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- Netanyahu presses Pompeo for more pressure on 'tottering' Iran

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- Turkey veto clouds Nato party in London
- Turkey Point licensed for 80 years of operation
- Turkey flexes muscle as Greece and EU stick to international law
- Turkey could close Incirlik air base in face of U.S. threats: Erdogan

East Asia

K. Japan

- METI eyes 2031 end to Fukushima No. 1 cleanup
- Arrangements in works for Iran's president to visit Japan this month
- U.S. signals approval for Tokyo visit by Iran's Rouhani amid nuclear impasse
- Nuclear no-no: 17-year-old nabbed for uranium trade
- Nuclear watchdog OKs decommissioning plan for two reactors at Kepco's Oi plant in Fukui
- Japan-Iran summit being finalized for Dec. 20 as Abe looks to play mediator

L. North Korea

- Experts expect North Korea to ratchet up provocations
- N. Korea steps up tensions with new missile launch platforms
- NK-set expiration of nuclear talks approaching
- North Korea threatens to resume calling Trump 'dotard'
- N. Korea says it carried out 'very important test' at satellite launch site
- North Korea says denuclearization not on negotiating table
- North Korea says denuclearization 'gone out of negotiation table' with US
- N. Korea conducts 'important test' at once-dismantled site
- N. Korea believed to test new rocket engine to provoke US
- N. Korea conducts 'another crucial test'
- Chief of KPA General Staff urges US to watch its mouth

M. South Korea

- Holding nuke talks this month will affect N. Korea's policymaking for next year: Minister
- Moon calls for Chinese role in denuclearizing North Korea
- S. Korea to promote exports of its designed nuke reactors
- Moon, Trump agree on need to maintain dialogue momentum over N. Korea

- South Korea's Moon to visit China for trilateral with Japan amid North Korea tension
- South Korea says North's recent test was of rocket engine

N. Op-Ed

India

- Story of father of Indian space programme in photos
- Policy Paralysis Cannot Be India's Response to the US-Iran Impasse
- India is in the second space age with one hand tied at the back
- ISRO Needs to Reflect on How It Can Encourage, Not Dismiss, Those Who Can Help
- Why India's Arihant-Class Missile Submarine Is a Serious Problem for China
- Twenty Years Ago, Nuclear-Armed India and Pakistan Fought a Chilly, High-Altitude War in the Himalayas
- This Means Drama: Indian Missile Defense Is Raising Tensions With Pakistan

China

- Why Does China Say It Won't Use Nuclear Weapons First in War?
- Here's China's Plan To Fight A Nuclear War Against America: Nuke U.S. Cities Millions would die.
- Why China's next Long March 5 rocket mission will be about restoring national pride
- Pentagon head says China has become top US military priority, moving past Russia

Pakistan

- Is Nuclear Non-Proliferation still a realistic goal?
- Pakistan's case stronger than India's for elite N-club membership: ex-envoy

USA

- Donald Trump's Greatest National Security Threat: A China-Russia Alliance
- The New Cold War? It's With China, and It Has Already Begun

Europe

- Emerging Europe's nuclear option
- Is Germany blocking nuclear because of gas?

Russia

- Russia Is Not The Soviet Union. So Why Can't Europe Help Pay More for NATO?
- The Story of the 4 Nuclear Torpedoes Russia Left Behind
- Say What? Why Russia Keeps Practicing Nuclear War
- The Russian Navy Has Some Problems
- Russia Could Kill American Carriers Without the "Poseidon" Nuclear Torpedo

West Asia

Iran

- Iran's ballistic missiles 'can carry nuclear weapons'
- Is Iran's missile program inconsistent with Resolution 2231?
- Iran vs. Israel: A (Nuclear?) War That Should Never Be Fought:

Turkey

- Turkey, Not Trump, Is the Biggest Threat to NATO Right Now
- Don't Blame Turkey for NATO's Woes
- Who benefits from a NATO without Turkey?
- Who's instructing the anti-Canal Istanbul 'Montreux lobby'? Map is memory; it shows future as much as it does history. From the Silk Road to the Bering Strait: Wealth, power map, our country's surface area all changed! After Canal Istanbul they're going to claim we have 'nuclear weapons.' Let's see what happens.

East Asia

North Korea

- N. Korea's shifting demands
- North Korean missile aggrandizement
- Rocketman vs. Dotard: war of words is back
- North Korea's hardline strategy on US and 'North Wind'

South Korea

- Nuclear phase-out policy will hurt economic growth: KERI
- UN Security Council to meet this week to discuss North Korea's provocation report
Second Korean War 'possible'
- NK could shutdown nuke talks unless US does U-turn: think tank
- Pyongyang trapped in illusion of 'North Korean superiority'

O. Think Tanks

- IAEA Mission Says Indonesia Strengthened Nuclear and Radiation Safety, Sees Areas for Enhancement
- Japan Downplays Possibility of Hosting INF-Range Missiles
- Decision on Autonomous Weapons Talks Eludes CCW
- Three Decades of Chemical Weapons Elimination: More Challenges Ahead
- And the prize for global nuclear security goes to... China
- Turkey's military drones: an export product that's disrupting NATO

P. Interviews/Reports

- Nuclear No First Use Spotlight
- I hope the next ISRO chief is a woman: Susmita Mohanty
- Nuclear Power in India
- World Energy Needs and Nuclear Power
- The Purpose, Scope, and Content of Safety Cases

A. India

Welfare of People affected by TAPS Project

PIB Delhi, December 4, 2019

The Land acquisition for the project was carried out in the first phase in 1960s and the second phase in early 2000s. The Project Affected Persons (PAPs) at Tarapur have been rehabilitated in line with the rehabilitation package formulated by the Maharashtra Government as per the then prevalent laws/acts.

In addition, Nuclear Power Corporation of India Limited (NPCIL) undertakes several programmes for the welfare of neighbourhood including PAPs, as a part of its Corporate Social Responsibility (CSR). These include providing civic amenities, Healthcare, Education & Skill Development, Infrastructure, Sanitation and Sustainable Development.

The Department of Atomic Energy (DAE) and NPCIL have made efforts to employ as many eligible people from among PAPs as possible, considering the requirements of the qualifications and skills required for various jobs in the nuclear power plants. Diversified initiatives to enable PAPs for securing employment/livelihood are implemented. These include relaxation in age and percentage of marks in qualifying criteria in recruitment to Group C posts advertised by Tarapur Atomic Power Station (TAPS), award of services and maintenance contracts to PAPs and special dispensation for allotment of shops in TAPS Township.

NPCIL as a Public Sector Enterprise of the Department of Atomic Energy follows all the orders/guidelines issued by the Central Government for recruitment. As per the extant rules, no quota is specifically earmarked for Local (Home District/Home State) candidates. However, NPCIL has provided question papers for recruitment in the posts to be carried out at the site (Group B technical and all Group C) in Marathi, in addition to English & Hindi.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1594970>

Power Allocation from Atomic Plants

PIB Delhi, December 4, 2019

The power generated by nuclear power plants is allocated by the Ministry of Power (MoP) to the various beneficiary States/ Union territories in the region. As per the extant MoP guidelines, 50% of power is allocated to the Home State, 15% is retained as unallocated power for allocation by the Government for meeting the urgent/overall requirement and the remaining 35% is to be allocated to other beneficiaries (except home state) in accordance with the pattern of central plan assistance and energy consumption during the previous five years, both factors having equal weightage.

The tariffs of electricity generated by nuclear power are comparable to those of the contemporary conventional base load power generating units like coal based thermal power located in the area/region.

A large nuclear power expansion programme is being implemented to boost nuclear power generation. The present installed nuclear power capacity of 6780 MW is expected to reach 22480 MW on progressive completion of projects under construction and accorded sanction.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1594967>

Neutrino Observatory in Tamil Nadu

PIB Delhi, December 5, 2019

The India based Neutrino Observatory is being planned in the Theni district in Tamil Nadu.

There has been opposition from some sections of the local populace. INO has been conducting outreach programmes in & around Madurai and Theni for students in schools & colleges, for faculty as well as journalists and media professionals. A large outreach program took place during May-August 2018 covering other towns in Tamil Nadu and a few in Kerala. Many

students, faculty and members of the public have visited the INO transit campus where an 85 ton mini-ICAL detector is operational detecting naturally occurring cosmic ray muons. This is a much smaller version of the detector that is planned in the cavern at the end of a 2km horizontal tunnel at the INO site.

In June 2010, a public meeting, though not mandated by Ministry of Environment and Forest (MoEF), was called by the Theni Collector. It was attended by about 1200 local people, including the Panchayat President, who endorsed the project. All the statutory norms and regulations are also followed in implementing the INO project. The INO site is not in the Eco Sensitive Area as identified by the High Level Working Group (HL WG) chaired by Dr. Kasturirangan and referred to in the MoEF Notification F.No.1-4/2012 - RE (Pt.) dated 13-11-2013.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1595160>

Proper Safety Apparatus in Nuclear Power Plants

PIB Delhi, December 5, 2019

Highest priority is accorded to safety in all aspects of nuclear power viz. siting, design, construction, commissioning, and operation. Nuclear power plants are designed adopting safety principles of redundancy, diversity and provided fail-safe design features following a defence in depth approach. This ensures that there are multiple barriers between the source of radioactivity and the environment.

The operations are performed adopting well laid out procedures by highly qualified, trained and licensed personnel. Appropriate Personal Protection Equipments and monitoring aids are provided to all the personnel working in the nuclear power plants.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1595159>

Commercialising R&D of ISRO

PIB Delhi, December 11, 2019

A new company by name, "NewSpace India Limited (NSIL)", has been incorporated on 06th March 2019, as a wholly owned Government of India Undertaking / Central Public Sector Enterprise (CPSE), under the administrative control of Department of Space (DOS) to commercially exploit the research and development work of Indian Space Research Organisation (ISRO) Centres and constituent units of DOS.

The business activities of NSIL are mainly driven towards enabling Indian industries to productionise space systems through technology transfer mechanisms and to exploit the commercial opportunities emanating from the Indian space programme. NSIL has commenced its commercial business operations since its incorporation.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1595881>

Satellites Launched by India

PIB Delhi, December 12, 2019

ISRO has launched satellites from 26 countries during the last five years. Contracts with 10 countries namely; USA, United Kingdom, Germany, Canada, Singapore, The Netherlands, Japan, Malaysia, Algeria and France were signed in the last five years under commercial arrangements.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1596193>

Agreement with Kazakhstan for supply of Uranium

PIB Delhi, December 12, 2019

A Contract was signed with M/sJSC NAC Kazatomprom, Kazakhstan on 08.07.2015 for procurement of 5000 MT of Uranium Ore Concentrate (UOC) spread over a period of 5 years during 2015 to 2019 at an indicative total cost of Rs.3156 crore, with an option to procure additional

quantity of 500 MT of UOC per year for four years from 2016 to 2019, on mutually acceptable terms. As per the contract with M/s JSC NAC Kazatomprom, the balance quantity of 1500 MTU is scheduled to reach

India in December 2019. The status of uranium supplies from other countries such as Canada, Argentina, Namibia, etc., is furnished as below:

Status of Uranium supplies from various countries

Sl. No	Date of Contract	Firm's name	Total Quantity to be procured as per contract	Status of Contract
1.	17.12.2008	M/s. AREVA, France	300 MT 'U' in the form of UOC	Contract stands executed
2.	11.02.2009	M/S.JSC TVEL, Russia	2000 MT 'U' in the form of Natural UO ₂ pellets	Contract stands executed
3.	11.02.2009	M/S.JSC TVEL, Russia	58 MT 'U' in the form of Enriched UO ₂ pellets	Contract stands executed
4.	03.03.2015	M/S.JSC TVEL, Russia	42 MT 'U' in the form of Enriched UO ₂ pellets	Contract stands executed
5.	31.12.2018	M/s. JSC TVEL, Russia	56.67 MT 'U' Enriched UO ₂ pellets	Contract stands executed
6.	15.04.2015	M/s. Cameco Inc., Canada	3000 MT 'U' in the form of UOC and additional quantity of 2500 MT 'U' with mutual agreement	Balance quantity 1000MT 'U' scheduled to be received in December-2019 and 1000 MT 'U' to be received in 2020
7.	18.01.2019	M/s. NMDC, Uzbekistan	1100 MT 'U' in the form of UOC	Supplies will start from 2022

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1596202>

PSLV successfully launches RISAT-2BR1 and nine commercial satellites in its fiftieth flight

PIB Delhi, December 11, 2019

India's Polar Satellite Launch Vehicle, in its fiftieth flight (PSLV-C48), successfully launched RISAT-2BR1 along with nine

commercial satellites from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota, today. PSLV-C48 lifted-off at 1525 Hrs (IST) from the First Launch Pad. After 16 minutes and 23 seconds, RISAT-2BR1 was successfully injected into an orbit of 576 km. Subsequently, nine commercial satellites were injected into their intended orbits. After separation, the two solar

arrays of RISAT-2BR1 were deployed automatically and the ISRO Telemetry Tracking and Command Network at Bengaluru assumed control of the satellite. In the coming days, the satellite will be brought to its final operational configuration. "Today we achieved an important milestone in the history of PSLV by successfully launching its 50th mission" Chairman, ISRO, Dr. K. Sivan declared. A book titled 'PSLV@ 50' was released by Dr. Sivan on this occasion. He further added that this versatile launcher has lifted off 52.7 tonne into space, of which 17% belongs to customer satellites.

RISAT-2BR1 is a radar imaging earth observation satellite weighing about 628 kg. The satellite will provide services in the field of Agriculture, Forestry and Disaster Management. The mission life of RISAT-2BR1 is 5 years. Dr. Sivan appreciated the efforts of the launch vehicle and satellite teams for realizing this mission in a short span of time. The nine customer satellites of Israel, Italy, Japan and USA were precisely injected into their designated orbits. These satellites were launched under a commercial arrangement with NewSpace India Limited (NSIL). PSLV-C48 is the 2nd flight of PSLV in 'QL' configuration (with 4 solid strap-on motors). Besides being the 50th launch of PSLV, today's launch was also the 75th launch vehicle mission from SDSC SHAR, Sriharikota. About 7000 visitors witnessed the launch live from the Viewer's Gallery in Sriharikota.

<https://pib.gov.in/PressReleseDetail.aspx?PRID=1595929>

HSL poised to deliver India's first missile tracking ship in New Year

Santosh Patnaik, The Hindy, December 2, 2019

India's first missile tracking ship being built at Hindustan Shipyard Limited is in advanced stage of construction. It is expected to be New Year gift to the Indian Navy, if the indications available at the HSL, a Ministry of Defence enterprise, hold water. The project which was launched in 2014 directly under the supervision of the

National Technical Research Organisation, the Prime Minister's Office and the National Security Advisor is being undertaken without a name due to secrecy attached to it.

<https://www.thehindu.com/news/national/andhra-pradesh/hsl-poised-to-deliver-indias-first-missile-tracking-ship-in-new-year/article30132810.ece>

Chandrayaan-2: Indian helps Nasa find Moon probe debris

BBC, December 3, 2019

Nasa says one of its satellites has found the debris of India's Moon rover which crashed on the lunar surface in September.

The space agency released a picture showing the site of the rover's impact and the "associated debris field". Nasa has credited an Indian engineer, Shanmuga Subramanian, with helping locate the site of the debris. Mr Subramanian examined a Nasa picture and located the first debris about 750m north-west of the crash site. Chandrayaan-2 was due to touch down at the lunar South Pole on 7 September, over a month after it first took off.

It approached the Moon as normal until an error occurred about 2.1km (1.3 miles) from the surface, moments before it was to touch down. The rover lost contact and had a "hard landing" about 600km (370 miles) from the South Pole in a "relatively ancient terrain". Announcing the discovery of the Vikram lander, Nasa tweeted a mosaic image of the site.

<https://www.bbc.com/news/world-asia-india-50639933>

India conducts another night trial of Prithvi-II missile

India Today, December 4, 2019

India on Tuesday conducted a night trial of its indigenously developed, nuclear-capable surface-to-surface Prithvi-II missile off Odisha coast. The Strategic Forces Command conducted the night trial

of short-range ballistic missile Prithvi-II from launch complex-3 of Integrated Test Range in Chandipur, said defence sources.

The missile, which has a strike range of 350 km, was test-fired at 7.48 p.m. on Tuesday, the sources added. The last night time test of the Prithvi-II was on November 20 this year. Prithvi-II, which is capable of carrying 500 to 1,000 kg of warheads, is powered by liquid propulsion twin engines.

<https://www.indiatoday.in/science/story/india-conducts-night-trial-prithvi-ii-missile-1624900-2019-12-04>

Interactive: How many satellites has India launched?

Varun B. Krishnan, The Hindu, December 4, 2019

RISAT-2BR1, India's 32nd earth observation satellite, was successfully launched on board the PSLV-C48 from the Satish Dhawan Space Centre in Sriharikota on December 11. This also was the 50th launch of the Polar Satellite Launch Vehicle (PSLV) and the 75th launch the space port in Sriharikota. It is accompanied by nine commercial satellites of Israel, Italy, Japan and the United States.

India's first earth observation satellite was Bhaskara-I, an experimental remote sensor which was placed in orbit in 1979. It consisted of two television cameras which gathered data on hydrology and forestry. In contrast, one of Cartosat-3's (the launch prior to RISAT-2BR1) cameras offers a ground resolution of 25 cm – this means it can sight an object of width as low as 25cm from a height of around 500 km.

According to ISRO, "The imageries from [Cartosat series] satellites are useful for cartographic applications, urban and rural applications, infrastructure planning, coastal land use and regulation, utility management such as monitoring road networks, water grids or distribution, creation of land use maps, among others."

<https://www.thehindu.com/sci-tech/how-many-satellites-has-india-launched/article30107480.ece>

Exoworlds to take off in 2025: Kasturirangan

Deccan Herald, December 5, 2019

Indian Space Research Organisation (ISRO) is embarking upon Exoworlds, an ambitious exoplanet mission. The launch is set for 2025. The mission 'Exoworlds' would find answers to the queries on the possibility of evolution of life in exoplanet system, said ISRO former chairman Dr K Kasturirangan. He was delivering the Endowment lecture 'Forays Into Space And Beyond', at St Aloysius College in Mangaluru on Wednesday. "Heavier vehicles are being developed by ISRO for interplanetary missions as India forays into solar and interplanetary explorations. India is set to launch the solar exploration 'Aditya L1' in 2020, Venus Orbiter in 2023, Chandrayan - 3 in 2024 and Exoworlds in 2025," he said.

The PRS satellite launched by ISRO has the best characteristics compared to any similar satellite launched by other countries. The Cartosat 3, which was launched four days ago, is enabled with the a resolution of 28 cm, which is the best in the world. ISRO is now able to design a recoverable system in the indigenous satellites, which can correct their path automatically, he said.

<https://www.deccanherald.com/state/mangaluru/exoworlds-to-take-off-in-2025-kasturirangan-782783.html>

A Billion Pixels and the Search for India's Crashed Moon Lander

Kenneth Chang, The New York Times, December 6, 2019

On Nov. 19, Mark S. Robinson opened an email with the subject line, "Vikram Lander's final resting place (Images with Proof)." Dr. Robinson is the principal investigator for the sharp-eyed camera aboard Lunar Reconnaissance Orbiter, a NASA spacecraft that has been mapping the moon for a decade, and he had received a lot of these emails since an

Indian robotic spacecraft disappeared in September as it attempted to land on the moon. But this one turned out to be the crucial clue in finding the missing lander, and on Monday NASA announced the location of the crash site, with photographs showing the scar on the moonscape.

The accomplishment was a triumph of crowdsourcing in modern space research, and pointed to the value of NASA's openness with its data and operations. Most of the data from American civilian space missions is freely available to both academics and curious amateurs, who were able to scour pictures from a NASA orbiter for signs of the Indian spacecraft.

<https://www.nytimes.com/2019/12/06/science/india-moon-mission-vikram-found.html>

Kudankulam unit 3 core catcher installed

World Nuclear News, December 9, 2019

A core catcher - also referred to as a core melt localisation device, or core trap - is designed to catch the molten core of a reactor in the unlikely event of a meltdown, preventing it from escaping the containment building. Kudankulam 3's core catcher is a new generation device, which is adapted to the relevant site conditions and safety requirements, ASE said. It has improved seismic resistance, hydro-dynamic and shock strength and is also equipped with flood protection and simplified installation and assembly technology.

Vladimir Angelov, ASE director for projects in India, said the core catcher is a "unique development by Russian nuclear experts" and one of the nuclear power plant's most important safety systems. "This is a special system for beyond-design basis accident management," he said. The case of Kudankulam 3's core catcher weighs 147.5 tonnes, and its components include block-assemblies filled with non-metallic materials, a maintenance platform, cantilever truss and bottom plate. The device was lifted by crane to a height of 27 metres for installation in its design position, ASE added.

Construction of unit 3 - one of two AES-92 design VVER-1000 units under construction as the second phase of the Kudankulam plant in Tamil Nadu - began in 2017. Kudankulam 1 and 2, both VVER-1000 units, have been in operation since 2014 and 2017, respectively. A third phase using the AES-92 design is also planned. ASE is the engineering division of Russian state nuclear corporation Rosatom and operates in Europe, the Middle East, North Africa and the Pacific region. Some 80% of ASE's revenue is accounted for foreign projects.

<https://www.world-nuclear-news.org/Articles/Kudankulam-3-core-catcher-installed>

India to lease third Akula-class nuclear attack submarine from Russia

Times of India, December 10, 2019

India is all set to lease a new Akula-class nuclear-powered attack submarine from Russia. Discussions have begun over the same and it'll be the 3rd submarine India will be leasing from Russia. India already has one nuclear-powered submarine, the Chakra, which it leased from Russia in 2012. The nine Russian-built Sindhughosh class submarines India has would be about 40 years old by 2020s and on their last legs, despite their refit, happening. Apart from that, India has four HDW Germany-designed submarines and six Scorpene submarines that are yet to join service.

<https://timesofindia.indiatimes.com/videos/news/india-to-lease-third-akula-class-nuclear-attack-submarine-from-russia/videoshow/72458340.cms>

Isro begins countdown for 50th PSLV launch, rocket to carry spy satellite

India Today, December 10, 2019

The Indian Space Research Organisation (Isro) began the countdown for another satellite launch Tuesday evening. The countdown, which began 4.40 pm Tuesday, is for the launch of the RISAT-2BR1 Earth imaging satellite. The "spy

satellite" will be carried onboard Isro's workhorse – the Polar Satellite Launch Vehicle (PSLV) rocket. The PSLV rocket's launch is scheduled to take place from the Satish Dhawan Space Centre in Sriharikota at 3.25 pm Wednesday. This will be the rocket's 50th mission.

The RISAT-2BR1 is a radar imaging Earth observation satellite that weighs around 628 kg. It is the second in the RISAT-2B series of satellites. The first RISAT-2B satellite was launched earlier this year to replace the ageing RISAT-2, which was decommissioned. Isro will launch two more RISAT-2B satellites in the coming days to complete a quartet of these "spy satellites". Not a lot is available in the public domain about the capabilities of the RISAT-2B satellites. Wednesday's launch of the RISAT-2BR1 comes days after the Isro successfully launched the CARTOSAT-3 Earth imaging satellite. On Wednesday, along with the RISAT-2BR1 Isro will also launch nine customer satellites – six from the US and one each from Israel, Italy and Japan – for which the space agency gets paid by other countries or companies.

<https://www.indiatoday.in/science/story/isro-countdown-pslv-launch-rocket-satellite-risat2br1-earth-imaging-1627153-2019-12-10>

PSLV-C48/RISAT-2BR1: Everything You Should Know About RISAT-2BR1 and the Nine Commercial Payloads Part of Today's Launch

First Post Tech 2, December 11, 2019

On 11 December, the Indian Space Research Organisation will launch India's newest defense satellite RISAT-2BR1, along with a string of commercial small satellites for ISRO's international clients, through a commercial arrangement with NewSpace India Limited (NSIL). The launch is planned for 3.25 pm on 11 December, when ISRO will launch the ten satellites on a Polar Satellite Launch Vehicle (specifically, the PSLV-C48).

This will be the 50th launch of the PSLV, and will take place from the First Launch Pad at the Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh. It will also be the second time that the PSLV is flown in the 'QL' configuration (with four strap-on motors). Here's everything we know so far about the various payloads (satellites) that will be launched on this mission.

<https://www.firstpost.com/tech/science/pslv-c48risat-2br1-everything-you-should-know-about-risat-2br1-and-the-nine-commercial-payloads-part-of-todays-launch-7768021.html>

India's foreign satellite launch count touches 319

India Today, December 12, 2019

India on Wednesday successfully placed into orbit its latest radar imaging earth observation satellite RISAT-2BR1 and nine foreign satellites from four countries using its PSLV rocket. In the process, India touched 319 foreign satellite launch mark ever since 1999. Declaring this will be the last rocket mission of ISRO for 2019, its chief K. Sivan said in 2020, there will be the maiden launch mission of new rocket Small Satellite Launch Vehicle (SSLV) and other rockets.

India's latest radar imaging earth observation satellite RISAT-2BR1 now up in the sky will send sharp clarity images for surveillance, agriculture, forestry and disaster management. The satellite camera can look through the clouds and take pictures. The Indian space agency officials said they would supply the required images for various agencies. It is for the user agency to decide on the image use. One more such satellite RISAT-2BR2 will soon be launched by ISRO. "I am extremely happy to declare that 50th PSLV rocket had injected the RISAT-2BR1 and nine customer satellites into precise orbit," the ISRO Chairman said post launch.

<https://www.indiatoday.in/science/story/india-s-foreign-satellite-launch-count-touches-319-1627577-2019-12-12>

B. China

DF-17 may not sole hypersonic missile program: media

Liu Xuanzun, Global Times, December 1, 2019

The DF-17, China's hypersonic missile that was first revealed at the National Day military parade on October 1, might not be the only hypersonic aircraft program China possesses, a report by the state broadcaster suggested. Analysts stressed that China will not fall behind in related technologies compared with the US and Russia. "From the test subjects that were made available to the public, the Xingkong-2 (Starry Sky-2) might use a different flight pattern to the DF-17," said military expert Ma Jun on Military Time, a China Central Television (CCTV) program on military affairs, on Saturday, without further elaboration.

According to Ma, the Xingkong-2 is still in the trial phase and more tests are expected. The Xingkong-2 Ma referred to is the first Chinese waverider hypersonic vehicle unveiled by the country, dating a year earlier than the DF-17. Designed by the China Academy of Aerospace Aerodynamics under the China Aerospace Science and Technology Corporation, the Xingkong-2 was successfully tested at a target range in Northwest China in August 2018, the academy announced then. When the DF-17 missile made its debut at the National Day parade this year, some thought it might be the final product of the Xingkong-2 project.

The DF-17 is said to be a glide-boost vehicle, but it is not known what type the Xingkong-2 might be, other than it could be different from the DF-17, although it was also propelled by a rocket, according to Ma. The US and Russia are striving to develop hypersonic weapons with both glide-boost and air-breathing technologies, as the two have different strengths and shortcomings, a military expert who asked not to be named told the Global Times. China will not fall behind and could develop multiple types of hypersonic weapons using different technologies in the future, the expert predicted.

<http://www.globaltimes.cn/content/1171896.shtml>

China to build space-based solar power station by 2035

Xinhua, December 2, 2019

China plans to accomplish a 200-tonne megawatt-level space-based solar power station by 2035, according to the China Academy of Space Technology (CAST). The space-based solar power station would capture the sun's energy that never makes it to the planet, said Wang Li, a CAST research fellow with the program, when attending the sixth China-Russia Engineering Forum held last week in Xiamen, southeast China's Fujian Province. The energy is converted to microwaves or lasers and then beamed wirelessly back to the Earth's surface for human consumption, Wang said.

However, ambition has long been a challenge for current technology because it involves the launch and installation of numerous solar panel modules and the efficient wireless transmission of mega energy. With an investment of 200 million yuan (28.4 million U.S. dollars), China is building a testing base in Bishan, southwest China's Chongqing Municipality, for the research of high-power wireless energy transmission and its impact on the environment. Researches in this field will spur the country's space science and innovation in emerging industries like commercial space transportations, Wang said.

http://www.xinhuanet.com/english/2019-12/02/c_138599015.htm

Xingkong-2: China's new missile threat?

Dave Makichuk, Asia Times, December 2, 2019

The DF-17, China's greatly feared hypersonic missile that was first revealed at the National Day military parade on October 1, might not be the only hypersonic aircraft program China possesses, a report by the state broadcaster

suggested. Analysts stressed that China will not fall behind in related technologies compared with the US and Russia, Global Times reported. "From the test subjects that were made available to the public, the Xingkong-2 (Starry Sky-2) might use a different flight pattern to the DF-17," said military expert Ma Jun on Military Time, a China Central Television (CCTV) program on military affairs, on Saturday, without further elaboration.

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<https://www.asiatimes.com/2019/12/article/xingkong-2-chinas-new-missile-threat/>

China, Iran hold consultation on Iran nuclear issue

Xinhua, December 2, 2019

China and Iran held a consultation on Iran nuclear issue Sunday in Beijing. The Chinese side was led by Vice Foreign Minister Ma Zhaoxu, while the Iranian delegation was led by visiting Deputy Foreign Minister Seyed Abbas Araghchi. Both sides exchanged in-depth views on the current Iranian nuclear situation and the implementation of the Joint Comprehensive Plan of Action (JCPOA), and reached broad consensus. They agreed to further strengthen communication and cooperation, safeguard the common interests of both countries as well as the international community.

http://www.xinhuanet.com/english/2019-12/01/c_138597844.htm

Country making strides toward Mars mission

Zhao Lei China Daily Global, December 3, 2019

China has been moving steadily toward its goal of fulfilling the country's first Mars mission in the coming two years, with Chinese scientists looking to send its astronauts to the red planet. Last week, the nation's space authority carried out a key experiment for the coming Mars mission in Hebei province's Huailai area, in front of dozens of foreign diplomats and journalists. The experiment, which aimed at verifying the design and capability of the lander of China's robotic Mars probe, was the first of its kind in the country, according to Zhang Kejian, the director of the China National Space Administration. Zhang oversaw the test. The move also marks the first time that China opened its Mars mission to foreign visitors, Zhang said, adding that it was a practical step in the nation's exchange and cooperation with the international space community.

"Through this event, you will be able to better understand our Mars mission and other deep-space exploration programs and we can discuss the feasibility of further cooperation," Zhang said before the experiment. "We welcome space authorities, research organizations and enthusiasts from around the world wishing to take part in our space endeavors." Zhang Rongqiao, chief designer of China's first Mars mission, said at the test site that the seven-minute landing process will be one of the most difficult and challenging parts in the nation's Mars mission. Therefore, engineers built the facility to simulate the red planet's gravitational condition and the Martian surface.

<https://www.chinadaily.com.cn/a/201912/03/WS5de5b0fca310cf3e3557b7b5.html>

China's sanctions a timely warning to US

People's Daily Online, December 3, 2019

Spokesperson Hua Chunying of China's Ministry of Foreign Affairs announced on Dec. 2 that in response to unreasonable US practice, the Chinese government will suspend reviewing requests of US military vessels and aircraft to visit Hong Kong starting the same day. In addition, China will also impose sanctions on America-based NGOs that played an egregious role in the Hong Kong amendment bill disturbance, including the National Endowment for Democracy, the National Democratic Institute for International Affairs, the International Republican Institute, Human Rights Watch and Freedom House.

The sanction imposed by China is reasonable and timely. It demonstrates the country's firm resolution on the Hong Kong issue. Hong Kong is an important transportation hub that links together the Asia Pacific region, and Victoria Harbor is one of the three largest natural seaports of the world. Considering Hong Kong as a vital replenishment site and an important point on its routes, the US military expects to rest and purchase in the region. After Hong Kong's return to China, the Chinese and US sides agreed that the US must request approval from the Chinese government before its military vessels and aircraft visit Hong Kong. Therefore, whether China approves the visits of US naval vessels and aircraft is within China's sovereignty, and China has every right to suspend reviewing requests.

<http://en.people.cn/n3/2019/1203/c90000-9637533.html>

China praises Europe's efforts in Iran barter mechanism

Global Times, December 3, 2019

China on Tuesday extended praise to several European countries for ramping up efforts to establish a barter mechanism that is designed to circumvent the US' unilateral sanctions on Iran, billing the move as conducive to break US financial hegemony.

However, the Chinese Foreign Ministry also expressed hope that the Instrument in Support of Trade Exchanges (INSTEX), a European initiative to facilitate non-dollar transactions with Iran, will include more countries beyond the EU. "We welcome the decision of the six European countries and support continuous progress of the INSTEX," Hua Chunying, a spokesperson for the Foreign Ministry, told a briefing on Tuesday, referring to the six European countries that have so far jumped on board on the initiative.

On Monday, Belgium, Denmark, Finland, Sweden and Norway announced that they would join France, Germany and the UK in the INSTEX, boosting the status of the mechanism and dealing a blow to the US, which unilaterally withdrew from an agreement reached by major countries, including China, and reinstated sanctions on Iran. Hua said that the EU's move is an effort to safeguard the Iran nuclear agreement, support multilateralism and preserve a rules-based global order. This is conducive to breaking the US' financial hegemony, Hua said. As the US continues to crack down on Chinese companies based on its domestic laws and sanctions, China has been pushing for alternatives to the current US dollar-dominated global clearing system for transactions, including setting up non-dollar settlement systems with trading partners.

<http://www.globaltimes.cn/content/1172152.shtml>

China's lunar rover travels over 345 meters on moon's far side

Xinhua, December 4, 2019

China's lunar rover Yutu-2 has driven 345.059 meters on the far side of the moon to conduct scientific exploration of the virgin territory. Both the lander and the rover of the Chang'e-4 probe have ended their work for the 12th lunar day, and switched to dormant mode for the lunar night, the Lunar Exploration and Space Program Center of the China National Space Administration (CNSA) said. Due to the complicated geological environment

and the rugged and heavily cratered terrain on the far side of the moon, Chinese space engineers carefully planned the driving routes of the rover to ensure its safety.

<https://www.chinadaily.com.cn/a/201912/04/WS5de77085a310cf3e3557bfc4.html>

Arms firm makes artificial diamonds that could be used in laser weapons

Liu Xuanzun Global Times, December 4, 2019

After a top Chinese arms firm showcased multiple types of artificial diamonds at a recent jewelry exhibition, military experts on Wednesday said the gemstones could also be used in military equipment, including laser weapons and other precision machines. The colorful synthetic diamonds on display at the recent 2019 China International Jewellery Fair in Beijing included large, high clarity samples, according to a statement by China North Industries Group Corporation Limited (NORINCO) on its WeChat account on Tuesday. Synthetic diamonds are made in laboratories using special materials which are put under high pressure and temperatures or treated with chemical vapors.

High-energy laser weapons may need industrial-level diamonds to ensure that their energy output is high enough to damage their targets, Wei Dongxu, a Beijing-based military analyst, told the Global Times on Wednesday.

<http://www.globaltimes.cn/content/1172265.shtml>

China's Amb. calls on certain state party to stop blocking BWC negotiations

China Military Online, December 5, 2019

The 2019 Meeting of States Parties to Biological Weapons Convention (BWC) kicked off on December 3 at the Palais des Nations in Geneva, Switzerland. H.E. Li Song, China's Ambassador for Disarmament Affairs, led a delegation to the meeting. Amb. Li Song said at the meeting that a

certain State Party is exclusively blocking the negotiation of a protocol that comprehensively enhances the effectiveness of the convention, while at the same time pointing fingers at other countries' compliance of the Convention.

China hopes that all parties will take the opportunity of the Meeting of States Parties to fully demonstrate their sincerity and flexibility, strive to find consensus, and promote the intersessional process and the Ninth Review Conference in 2021 to achieve positive results. China supports any efforts that contribute to the above process, said Amb. Li.

As the first international treaty to completely ban a whole class of weapons (i.e. biological weapons), the BWC was reached in 1972 and entered into force in 1975. Currently, it has 183 States Parties. BWC gives States Parties the right to peaceful use of biotechnology, and provides for international cooperation in this regard. In December 2015, China proposed two major initiatives under the BWC—the establishment of a “Biological Non-Proliferation Export Control and International Cooperation Regime” and the development of a “Model Code of Conduct for Bio-scientists”.

http://english.chinamil.com.cn/view/2019-12/05/content_9690160.htm

Chinese private rocket complete the third phase engine thermo ground test

Global Times, December 5, 2019

Chinese private rocket company Galactic Energy has successfully finished the third stage thermo ground test for its Ceres-1 launch vehicle on Tuesday, according to a company statement. The Ceres-1 rocket, which is the one of the two rockets that the company is currently developing, is expected to launch in March 2020. The Ceres-1 rocket is a low earth orbit (LEO) solid rocket. Its liquid rocket Pallas-1 will be launched in December 2022.

Prior to the third phase test, the phase one and phase two ground firing tests for

Ceres-1 have already been completed in September and in early November, the statement said. Galactic Energy, the Beijing-based budget rocket company is founded in 2018 and aims to provide low-cost, high-frequency access solutions to space trips and transportations. The company has so far successfully completed the firing test of the engine gas generator for its liquid rocket Pallas-1, apart from the thermo ground test for the solid rocket Ceres-1.

<http://www.globaltimes.cn/content/1172366.shtml>

China's new PCL191 multiple launch rocket system casts shadow over Taiwan Strait

Minnie Chan, South China Morning Post, December 7, 2019

The multiple launch rocket system (MLRS) that made its public debut at China's National Day parade on October 1 has been identified as a state-of-the-art piece of weaponry capable of firing both rockets and ballistic missiles, according to a leading military magazine.

A report in the latest issue of *Modern Ships* also gave the new hardware a name – the Type PCL191 – saying it was a modular launcher based on the AR3 system developed by China for the export market. Unlike other weapon systems on display in Beijing, which had their names emblazoned along their sides, the Type PCL191 rumbled through the streets of Beijing on the back of heavy-duty trucks with almost complete anonymity.

A commentator for state broadcaster CCTV described it simply as a “self-propelled rocket launcher with precision strike capability”. *Modern Ships* went further, saying the modular rocket system can carry eight 370mm (14½ inch) rockets – each with a range of 350km (220 miles) – or two 750mm Fire Dragon 480 tactical ballistic missiles – each capable of flying up to 500km.

<https://www.scmp.com/news/china/military/article/3041007/chinas-new-pcl191-multiple-launch-rocket-system-casts-shadow>

China launches new optical remote sensing satellite

Xinhua, December 7, 2019

The Jilin-1 Gaofen 02B satellite, which belongs to the Jilin-1 satellite family, is launched with Kuaizhou-1A (KZ-1A) from the Taiyuan Satellite Launch Center in north China's Shanxi Province Dec. 7, 2019. The new optical remote sensing satellite will form a network with the 14 previously launched Jilin-1 satellites, providing remote sensing data and services for agriculture, forestry, resources and environment.

http://www.xinhuanet.com/english/2019-12/07/c_138612692_2.htm

Chinese rocket 1st to make 2 flights in a day

Zhao Lei, China Daily, December 7, 2019

China Aerospace Science and Industry Corp's Kuaizhou 1A solid-fuel carrier rocket conducted two launch missions on Saturday, becoming the first Chinese rocket to make two flights in a single day. A Kuaizhou 1A blasted off at 10:55 am at the Taiyuan Satellite Launch Center in northern China's Shanxi province and then placed the Jilin-1 Gaofen 02B optical remote-sensing satellite into space. About six hours later, another Kuaizhou 1A was fired at 4:52 pm at the same center and sent up six small satellites developed by three domestic private enterprises, according to CASIC, a State-owned defense and space conglomerate.

Kuaizhou is the largest solid-propellant rocket family in China, as opposed to the Long March series that mainly relies on liquid fuel. Nine Kuaizhou-series rockets have been used since the first Kuaizhou mission in September 2013. The 20-meter Kuaizhou 1A has a liftoff weight of about 30 metric tons. It is capable of sending 200 kilograms of payload into a sun-synchronous orbit, or 300 kg of payload into a low-Earth orbit, according to CASIC.

<https://www.chinadaily.com.cn/a/201912/07/WS5deb932ea310cf3e3557c96c.html>

China confirms satellite launch after military rocket's 'dragon's tail' stirs online speculation

Liu Zhen, South China Morning Post, December 8, 2019

China launched seven civilian satellites on Saturday using mobile launch vehicles normally used to fire military rockets, state broadcaster CCTV reported. The first launch in the morning sent one remote sensing satellite into orbit, while six satellites – to be used for purposes such as communications and navigation – were sent into orbit in the evening. The second launch from Taiyuan Satellite Launch Centre created a mysterious zigzag shaped “dragon cloud” that, thanks to clear skies over northern China, was visible from Beijing – 500km to the east, which stirred speculation on social media.

These characteristics mean the rockets could allow for the speedy launch of replacement satellites if the country's communication or navigation network in space was damaged or came under attack. The KZ-1A was first launched in 2017 and Saturday's dual launches were its fourth and fifth missions this year, all of which were completed successfully.

<https://www.scmp.com/news/china/military/article/3041159/china-confirms-satellite-launch-after-military-rockets-dragons>

China publishes military book series

Xinhua, December 9, 2019

A series of military books were published Monday by China's Changjiang literature and art press. Calling military literature an important part of China's modern and contemporary literature, Yan Jingming, vice-president of the China Writers Association, said the book series is of great academic and artistic value. The book series, consisting of 70 volumes, includes over 700 literary works of novels, poems, essays, reportage and plays. Classic revolutionary novels, such as “Hong Yan (Red Crag)” and “Tracks in the Snowy Forest,” are included in the series.

http://www.xinhuanet.com/english/2019-12/10/c_138618364.htm

China improves space-based observation of Earth

Xinhua, December 10, 2019

China has greatly improved its ability to observe the Earth from space with a series of high-resolution remote sensing satellites sent into orbit over the past nine years, according to the China National Space Administration (CNSA). The satellites, belonging to China's high-resolution Earth observation project (Gaofen project) initiated in 2010, have formed a stable satellite remote sensing system, said Tong Xudong, chief designer of the project. The project has increased the resolution of China's low-earth orbit remote sensing satellites from 2.1 meters to 0.65 meter, and the resolution of China's geostationary orbit remote sensing satellites improved from kilometer-level to 50 meters, Tong said.

The satellites, covering different observation bands, are deployed in different orbits, giving China a preliminary ability for all-weather and round-the-clock observation, said Tong. Launched on April 26, 2013, Gaofen-1 can cover the globe in four days, with an observation ability of medium resolution and wide coverage.

http://www.xinhuanet.com/english/2019-12/10/c_138620146.htm

China releases first 3D images based on Earth observation satellite

Xinhua, December 10, 2019

The China National Space Administration Tuesday released the first batch of three-dimensional images based on the data from the recently launched Gaofen-7 Earth observation satellite. The Gaofen-7, an important part of China's high-definition Earth observation project, is the country's first civil-use optical transmission three-dimensional surveying and mapping satellite that reaches the sub-meter definition. The 22 images unveiled show the Beijing Capital International Airport, the new Beijing Daxing International

Airport, as well as some regions in China's Anhui, Guangdong and Shandong provinces. Airplanes, vehicles, buildings and trees can be clearly seen in the images.

The satellite, launched from the Taiyuan Satellite Launch Center in north China's Shanxi Province on Nov. 3, is in orbit at an altitude of 506 km and has a design life of eight years. More than 14,000 images have been obtained by the satellite. It will be mainly used for 1:10,000-scale 3D mapping. Only a few countries have acquired this level of satellite surveying and mapping, said Cao Haiyi, chief designer of the Gaofen-7 at the China Academy of Space Technology. Its horizontal positioning accuracy of ground objects is within five meters, and the height measurement accuracy about 1.5 meters, said Cao. "It's like a precise ruler for measuring the land. Before the launch of Gaofen-7, we could only precisely locate super-highways, but now Gaofen-7 can help us accurately locate rural roads," Cao said.

http://www.xinhuanet.com/english/2019-12/10/c_138620096.htm

China urges US to fulfill duties on nuclear disarmament

China Daily, December 11, 2019

China on Wednesday urged the United States to earnestly fulfill its special duties on nuclear disarmament and further cut its large nuclear arsenal. "As the country with the world's largest and most advanced nuclear arsenal, the United States should earnestly fulfill its special duties on nuclear disarmament, respond to Russia's call for extending the New Strategic Arms Reduction Treaty, and further cut its large nuclear arsenal, so as to create conditions for other nuclear countries to join the multilateral nuclear disarmament negotiations," spokeswoman Hua Chunying said at a press briefing.

"China has always been committed to safeguarding international arms control and the non-proliferation system, advancing the process of international arms control and disarmament, and safeguarding global strategic balance and stability," she said.

China is willing to work with all parties to continue to strengthen communication and coordination and carry out discussions on issues concerning global strategic stability, so as to make positive contributions to global peace and security, Hua added.

<https://www.chinadaily.com.cn/a/201912/11/WS5df0fb21a310cf3e3557d87c.html>

Chinese delegation arrives for ICG-14

Deng Xiaoci, Global Times, December 11, 2019

The 14th Meeting of the International Committee on Global Navigation Satellite Systems (ICG) of the UN kicked off in Bangalore, India on Sunday and will conclude on Friday. Led by Yang Changfeng, the Chief Architect of the BeiDou Navigation Satellite System (BDS), the Chinese delegation with more than 50 representatives will participate in the summit. A BDS system update is expected to be presented. The meeting is hosted by Indian Space Research Organization. Before 2020, China will launch another cluster of MEO satellites for the BDS-3 system, which will be the final group for the system and complete core constellation deployment, it revealed.

Next year it is expected that BDS will possess full operational capability. As an important Chinese public service space infrastructure that is open to the world, BDS will insist on following the service concept of "the China's BDS, the world's BDS, and the top-class BDS," for the construction and development for the system, according to the statement.

<http://www.globaltimes.cn/content/1172881.shtml>

Keeping pace with application of AI to defense sector

Li Daguang/Yang Yannan, China Daily, December 11, 2019

Russia, according to media reports, may establish a unit of robot soldiers by 2025,

outlining a vision of artificial intelligence-driven warfare in the future. The application of AI has been a focus of Russia's military modernization. Way back in 2017, at a meeting with students in Yaroslavl, Russian President Vladimir Putin said artificial intelligence is "not only the future of Russia but that of all mankind" as well, adding that, "there are colossal opportunities and threats that are difficult to predict now". Russia reportedly plans to devise a framework for the military unit of robots in 2020, and complete the scientific research, design and tests, and put robotic combat units into service in 2025.

<https://www.chinadaily.com.cn/a/201912/11/WS5df0341ca310cf3e3557d477.html>

China's lunar rover sets record for longest operation

China Daily, December 12, 2019

China's lunar rover Yutu 2 has set the record for operating the longest among rovers on the moon, with over 11 months so far, according to the Lunar Exploration and Space Program Center of the China National Space Administration. The Chinese rover landed with the Chang'e-4 probe in the South Pole-Aitken Basin on the far side of the moon on Jan 3, 2019, and carried out its patrol missions since then.

Yutu-2 has driven 345.059 meters on the far side of the moon to conduct scientific exploration of virgin territory. Driving slowly but steadily, Yutu 2 is expected to continue traveling on the moon and making more scientific discoveries. Both the lander and the rover of the Chang'e-4 probe have ended their work for the 12th lunar day, and switched to dormant mode for the lunar night on Dec 3. A lunar day equals 14 days on Earth, a lunar night is the same length. Before Yutu 2, the former Soviet Union's Lunokhod 1 moon rover that landed on moon in 1970 held the record for the longest operational rover with 321 days, or 10 and half months. Chang'e-3, China's first lunar lander which touched down on the moon on Dec 14, 2013, has been operating on the moon for six years, the longest time for an

active probe. It has been awakened on Dec 7 to work for the 75th lunar day.

<https://www.chinadaily.com.cn/a/201912/12/WS5df1e578a310cf3e3557dbc0.html>

Rare earths become the newest 'decoupling' frontier

Tom Fowdy, China Daily, December 12, 2019

Several days ago it was announced in major American newspapers that the United States Army would be seeking to invest in new sources of "rare earths" - defined as "chemically similar metallic elements" in the construction of military equipment and hardware. Although the reports didn't focus in any particular country or source, two days later the National Defense Authorization Act (NDAA) was passed and in it, the name "China" appeared 69 times. A goal was stipulated "that the United States will eliminate dependency on rare earth materials from China by the fiscal year 2035."

<https://www.chinadaily.com.cn/a/201912/12/WS5df1e2ffa310cf3e3557dbbc.html>

Chinese envoy calls for peace talks to ease tensions on Korean Peninsula

Hong Xiao China Daily, December 13, 2019

China's ambassador to the United Nations on Wednesday called on the international community to ease the tensions over the Korean Peninsula through political solutions and peace talks. Zhang Jun, China's permanent representative to the UN, said it is crucial "to maintain the international consensus and momentum for a political solution" and to "support and urge the United States and the Democratic People's Republic of Korea to move toward each other, and do everything we can to head off a dramatic reversal of the peninsula's situation". Zhang spoke at a Security Council meeting at UN headquarters in New York,

reiterating that China has been consistent in its commitment to denuclearization of the peninsula, maintenance of its peace and stability, and the settlement of issues through dialogue and consultation. "We remain ready to take actions in parallel, and to simultaneously take concrete steps toward this agreement. We are prepared to be flexible in how we approach this matter," said Kelly Craft, US ambassador to the UN. "And we recognize the need for a balanced agreement that addresses the concerns of all parties."

<https://www.chinadaily.com.cn/a/201912/13/WS5df2ef24a310cf3e3557de88.html>

Yutu 2 is now longest working rover on moon

Zhao Lei, China Daily, December 13, 2019

China's Yutu 2 rover has been in operation on the lunar surface for more than 340 days, becoming the longest working rover on the moon, according to the China National Space Administration. Yutu 2, China's second lunar rover, is part of the ongoing Chang'e 4 mission. The Chang'e 4 unmanned probe was lifted atop a Long March 3B rocket in December 2018 at the Xichang Satellite Launch Center in Sichuan province to begin the country's fourth lunar exploration and the world's first expedition to the moon's far side, which never faces Earth. The probe made a soft landing on the far side on Jan 3 and released the Yutu 2 later that day to roam and survey the landing site in the South Pole-Aitken basin, the largest and deepest known basin in the solar system. Currently, the Chang'e 4's lander and the rover are in their 12th dormancy. The Yutu 2 has traveled nearly 350 meters on the lunar soil, according to the Lunar Exploration and Space Engineering Center.

A lunar day equals 14 days on Earth ya lunar night, the same length. During the lunar night, the temperature falls below minus 180 C and there is no sunlight to provide power to the probe. In another development, the lander of the Chang'e 3 probe, the first Chinese spacecraft to soft-land on the moon, has started its 75th lunar-

day working session, which means it has been working on the moon for 2,189 Earth days and continues to hold the record for the longest operational stay by an artifact on the moon, the center said.

<https://www.chinadaily.com.cn/a/201912/13/WS5df2e464a310cf3e3557dd69.html>

C. Pakistan

Fawad Ch urges world to take notice of irresponsible Indian space missions

The Nation, December 3, 2019

Federal Minister for Science and Technology Fawad Chaudhry has on Tuesday said irresponsible space missions of India are dangerous for whole ecosystem. NASA made the announcement on Monday, releasing an image taken by its Lunar Reconnaissance Orbiter (LRO) that showed the site of the spacecraft's impact (September 7 in India and September 6 in the US).

A version of the picture was marked up to show the associated debris field, with parts scattered over almost two dozen locations spanning several kilometers.

<https://nation.com.pk/03-Dec-2019/irresponsible-space-missions-of-india-dangerous-for-whole-ecosystem-fawad-ch>

New IAEA Collaborating Centre in Pakistan to assist in Applications of Nuclear Technologies

Shant Krikorian, International Atomic Energy Agency, December 5, 2019

With a cooperation agreement signed today, the IAEA has designated the Pakistan Institute of Engineering and Applied Sciences (PIEAS) as an IAEA Collaborating Centre to support Member States on research, development and capacity building in the application of advanced and innovative nuclear technologies.

Islamabad-based PIAES is one of Pakistan's leading public research university in engineering and nuclear

technology and a major nuclear research facility of the Pakistan Atomic Energy Commission. "I cannot emphasize enough the importance of education and training for building the capacity of Member States in this field," said IAEA Deputy Director General Mikhail Chudakov, Head of the Department of Nuclear Energy, at the signing ceremony at the Agency's Vienna headquarters. "Through this network, the Agency encourages scientific studies and cooperation across Member States, making the centres a key IAEA cooperation mechanism." This partnership with PIAES is based on a holistic and multidisciplinary approach in three key areas: modelling and simulations with verification and validation capabilities, experimental nuclear engineering, and education and training. Member States will strengthen their capacities in reactor technology design, nuclear-renewable hybrid energy systems, and reactor numerical modelling and simulations.

<https://www.iaea.org/newscenter/news/new-iaea-collaborating-centre-in-pakistan-to-assist-in-applications-of-nuclear-technologies>

IAEA commends nuclear security measures taken by Pakistan

Pakistan Today, December 7, 2019

The International Atomic Energy Agency (IAEA) has commended Pakistan's nuclear security measures. IAEA's Nuclear Security Division Head Abdul Aziz Raja Adnan, during his visit to Karachi Nuclear Power Plant, said that measures adopted by Pakistan were consistent with the IAEA's recommendations. Raja Adnan also met Pakistan Nuclear Regulatory Authority Chairman Zaheer Ayub Baig and Pakistan Atomic Energy Commission Chairman Muhammad Naeem. The delegation was visiting Pakistan to further strengthen ongoing cooperation between Pakistan and the nuclear watchdog.

In a statement, Foreign Office Spokesperson Dr Muhammad Faisal said Pakistan has undertaken a range of measures to strengthen nuclear security. He said Pakistan has been actively participating and

contributing in IAEA's efforts to promote nuclear security. The International Atomic Energy Agency is an international organisation that seeks to promote the peaceful use of nuclear energy, and to inhibit its use for any military purpose, including nuclear weapons.

<https://www.pakistantoday.com.pk/2019/12/07/iaea-commends-security-measures-undertaken-by-pakistan/>

Cold testing completed at Pakistan's Karachi 2

Nuclear Engineering, December 9, 2019

China National Nuclear Corporation (CNNC) has completed cold functional testing at unit 2 of the Karachi nuclear power plant (Kanupp) in Pakistan. The two units (2&3) under construction at Kanupp are the first exports of China's Hualong One reactor design. Cold functional testing at Karachi 2&3 involved checking some 7200 welds and 800 mechanical connection points within the test boundary for leaks on seven pressure platforms, CNNC said. All indicators met the acceptance criteria, and installation quality and performance meet design requirements.

Completion of the cold test on 2 December was overseen by the Pakistan Nuclear Regulatory Authority and the Pakistan Atomic Energy Commission. It marks the completion of the main work of the nuclear island installation and the start of the system commissioning stage, CNNC said. Hot testing will follow, then first fuel loading and finally grid-connected power generation.

Construction of Karachi 2 began in 2015 and unit 3 in 2016 for commercial operation in 2021 and 2022. Currently, four Hualong One units are being built in China - two at Fuqing NPP in Fujian province, and two at Fangchenggang NPP in Guangxi - all scheduled for commercial operation in 2019-2020.

<https://www.neimagazine.com/news/newscold-testing-completed-at-pakistans-karachi-2-7551887>

Acknowledgement of nuclear security

Pakistan Observer, December 9, 2019

Pakistan has once again received applaud from the International Atomic Energy Agency (IAEA) for its excellent nuclear security and safety record which is at par with any other nuclear powers of the globe. IAEA's Nuclear Security Division Head Abdul Aziz Raja Adnan, during his visit to Karachi Nuclear Power Plant, stated that the measures adopted by Pakistan were consistent with the IAEA's recommendations. In a statement, Foreign Office spokesperson Dr. Muhammad Faisal also said that Pakistan has been actively participating and contributing in IAEA's efforts to promote nuclear security.

There has never been any real threat to Pakistan's nuclear installations or assets because of multi-layers of security and safety measures as well as adoption of latest technologies for the purpose but some vested interests have been engaged in consistent propaganda campaign to create misgivings in this regard. Their objective is nothing but to malign Pakistan and depict it as an irresponsible nuclear power as its nuclear capability is an eye-sore to some powers.

<https://pakobserver.net/acknowledgement-of-nuclear-security/>

KANUPP takes CSR to the next level

Muhammad Aftab Alam, Pakistan Today, December 15, 2019

The very first word that jumps to mind when we have a glance at the pyramids and such iconic landmarks is 'wonder' but what these actually reflect is 'legacy'—of some visionary leaders who built these marvels centuries ago. Today's leaders should also aspire to leave the legacies. They should ensure that whatever they do must have sustainability so that long after they are gone, whatever they started continues to evolve.

To achieve this level of transformational legacy, we have to pursue more than the typical concept of Corporate Social

Responsibility (CSR) that entails a few nicely-worded hollow promises on official websites and some feel-good philanthropist initiatives. Rather, such legacy requires taking CSR to the next level that is deeply engrossed in all the activities of an organisation.

And that is exactly what Karachi Nuclear Power Project (KANUPP) has been aiming to achieve for over four decades. On the Arabian Sea coast, approximately 18km east of Karachi, KANUPP is Pakistan's first nuclear power plant inaugurated on 28 November 1972. It comprises a single-unit Canada Deuterium Uranium (CANDU) pressurised heavy-water reactor supplied by the Canadian General Electric Company with a gross output of 137MWe. The plant is one of the five nuclear power plants currently owned and being operated by the Pakistan Atomic Energy Commission.

<https://www.pakistantoday.com.pk/2019/12/15/kanupp-takes-csr-to-the-next-level/>

D. USA

Sanctions May Have Fueled Iran Protests, but Have Yet to Further U.S. Goals

David E. Sanger, New York Times, December 2, 2019

President Trump likes to say that Iran is "a different country" after 18 months of punishing American sanctions, and the protests sweeping Iranian cities suggest he may be right. Even his most vociferous critics acknowledge that Mr. Trump's "maximum pressure" campaign helped fuel that unrest. But it is far from clear that what is unfolding on the streets today will make Iran more likely to renegotiate its nuclear deal or dial back its malign actions in the region, the two major American goals in dealing with the country.

He was referring to a quiet American effort, dating back several years, to provide ordinary Iranians with tools to encrypt communications and other ways to communicate without government

interference – what the United States calls free speech, and what the Iranian government calls an interference with its cybersovereignty.” There is a universe in which the Iranian leadership, given the severity of the crisis, seizes this moment to reach a deal with the U.S. that would remove these sanctions in exchange for Tehran complying with the nuclear deal and starting negotiations on a new, broader agreement,” said Robert Malley, the president of the International Crisis Group and one of the negotiators of the 2015 accord when he served on President Barack Obama’s National Security Council.

<https://www.nytimes.com/2019/12/02/us/politics/us-sanctions-iran-protests.html>

Keeping up with China: US Navy orders \$22 billion worth of submarines

Brad Lendon, CNN, December 3, 2019

The US Navy on Monday awarded its most expensive shipbuilding contract ever, more than \$22.2 billion worth of the world’s most advanced submarines. The massive contract for nine nuclear-powered, Virginia class attack submarines comes just months after the head of the US Navy in the Pacific warned of a massive Chinese naval buildup and his trouble in getting enough submarines to counter it.

The deal “marks the US Navy’s latest response to China’s growing military power and aggressive actions in the Western Pacific,” said Carl Schuster, a former director of operations at the US Pacific Command’s Joint Intelligence Center.

“The PLAN (Chinese Navy) is getting better and larger so the US Navy has to respond,” he said. “It doesn’t make China an enemy, but China’s actions do bear watching.” Virginia class submarines are the US Navy’s key multi-mission undersea platform. They are capable of fighting other submarines, surface ships and land targets, as well as conducting special operations including intelligence gathering and reconnaissance.

<https://edition.cnn.com/2019/12/03/politics/us-navy-submarines-contract-intl-hnk/index.html>

Oklo unveils its vision of Aurora plant

World Nuclear News, December 3, 2019

Oklo describes Aurora as an “advanced fission clean energy plant design developed to power communities with affordable, reliable, clean power.” The Aurora “powerhouse” includes a “fission battery” which uses metallic fuel. It can produce about 1.5 MW of electrical power and can also produce usable heat, the company says.

“The Aurora is built on years of technology research, development, and demonstration done at the US national labs and universities, and work done by Oklo to make the Aurora possible,” Oklo CEO Jacob DeWitte said. “While heat and electrons are the product, the Aurora powerhouse is the main point for community interaction. We spent years thinking about how it could look, how it would function, and how it would become a point of pride in a community.”

The company claims Aurora offers “many unique and beneficial attributes” including the ability to produce power for decades without needing to refuel, its small size, the placement of the fuel underground, the ability to operate without needing cooling water, the demonstrated natural shutdown behaviour of the fuel, and the use of a fission spectrum which can recycle fuel and ultimately convert nuclear waste to clean energy.

<http://world-nuclear-news.org/Articles/Oklo-unveils-its-vision-of-Aurora-plant>

Nuclear for Climate speaks at COP25

World Nuclear News, December 6, 2019

The panellists in the session, titled, No time to lose - why the world needs all low-carbon energy sources to achieve its climate goals - were Valérie Faudon, co-founder of Nuclear for Climate and vice-president of the European Nuclear Society (ENS), Ignacio Araluce, president of the Spanish Nuclear Industry Forum, Jadwiga

Najder, vice-chair of the ENS Young Generation Network, and Sebastien Richet, chair of the Global Initiative to Save Our Climate (GISOC).

They noted the progress the industry has made in the climate debate: The NICE Future initiative ensures that nuclear is now properly represented in the Clean Energy Ministerial; recent reports from the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA), and the World Energy Council have all highlighted nuclear power's role in the energy transition; the International Atomic Energy Agency organised its first ever conference on climate change and the role of nuclear power, in which the IPCC, the United Nations Department of Economic and Social Affairs, the United Nations Economic Commission for Europe, and the United Nations Industrial Development Organisation, all participated; and the European Parliament recently passed a resolution stating that all technologies - including nuclear - are needed to combat climate change.

<http://world-nuclear-news.org/Articles/Nuclear-for-Climate-speaks-at-COP-25>

US and Canadian regulators select SMR for joint review

World Nuclear News, December 6, 2019

This follows the signature by CNSC President Rumina Velshi and NRC Chairman Christine Svinicki in August of a Memorandum of Cooperation (MOC) to expand the agencies' cooperation on activities associated with advanced reactor and SMR technologies. Both regulators are already carrying out regulatory activities related to proposed SMR projects. The MOC's collaborative technical reviews are intended to increase regulatory effectiveness as well as reaffirm the agencies' commitment to safety and security.

Terrestrial Energy CEO Simon Irish said: "We look forward to participating in joint CNSC and NRC reviews of IMSR advanced reactor technology and to supporting the

goals set by the agencies in the August Memorandum of Cooperation." Terrestrial Energy's IMSR is the subject of ongoing regulatory engagement in both Canada and the USA, the company said. The 195 MWe reactor is the only advanced reactor so far to have progressed to the second phase of the CNSC's Vendor Design Review process, and is also the subject of NRC pre-licensing activities supported by grant funding from the US Department of Energy.

<http://world-nuclear-news.org/Articles/US-and-Canadian-regulators-select-SMR-for-joint-re>

Trump, South Korea's Moon discuss trying to maintain talks with North Korea

Josh Smith Reuters, December 7, 2019

U.S. President Donald Trump and South Korean President Moon Jae-in held a half-hour phone discussion on ways to maintain diplomacy with North Korea, Seoul said on Saturday, as Pyongyang warns of waning patience with stalled nuclear talks.

The two leaders agreed that the situation has become "severe" and that "dialogue momentum should be maintained to achieve prompt results from denuclearisation negotiations," South Korea's presidential Blue House said in a statement. Tensions are rising ahead of a year-end deadline set by North Korea, which has called on the United States to change its policy of demanding unilateral denuclearisation or leader Kim Jong Un may choose an unspecified "new path".

In a series of statements in recent weeks, senior North Korean officials have warned the United States not to ignore the deadline, and called Washington's offer of more talks a stalling tactic ahead of next year's U.S. election.

<https://in.reuters.com/article/southkorea-usa-northkorea/trump-south-koreas-moon-discuss-trying-to-maintain-talks-with-north-korea-idINKBN1YB040>

North Korea's U.N. envoy says denuclearization off negotiating table with United States

Michelle Nichols and David Brunnstrom, Reuters, December 7, 2019

North Korea's ambassador to the United Nations said on Saturday that denuclearization is off the negotiating table with the United States and lengthy talks with Washington are not needed, the starkest statement yet emphasizing the gulf between the two sides ahead of a year-end deadline set by Pyongyang.

U.S. President Donald Trump sought to play down a recent surge in tensions with North Korea, stressing what he said was his good relationship with its leader Kim Jong Un and saying he thought Kim wanted a deal, not to interfere in next year's U.S. presidential election. "We'll see about North Korea. I'd be surprised if North Korea acted hostilely," Trump told reporters at the White House before leaving for Florida. "He knows I have an election coming up. I don't think he wants to interfere with that, but we'll have to see ... I think he'd like to see something happen. The relationship is very good, but you know, there is certain hostility, there's no question about it."

Trump has invested considerable time trying to persuade North Korea to give up a nuclear weapons program that has grown to threaten the United States, but progress has been scant in spite of his three meetings with Kim Jong Un.

<https://www.reuters.com/article/us-northkorea-usa/north-koreas-un-envoy-says-denuclearization-off-negotiating-table-with-united-states-idUSKBN1YB0FG>

Cheney Warns Disengagement in Mideast Benefits Iran, Russia

The New York Times, December 9, 2019

Former Vice President Dick Cheney warned Monday that "American disengagement" in the Middle East will benefit only Iran and Russia, indirectly criticizing President Donald Trump's pledges to pull forces out of the region. While stressing that he's no

longer in government, Cheney's comments in Dubai cut to the core of several policies taken by Trump, including the sudden withdrawal of U.S. forces from Syria.

The former vice president mentioned Trump by name only once in praising him for pulling out the 2015 nuclear deal with Iran. But Cheney's backing of a muscular military response in the Mideast starkly contrasts Trump's promises to pull America from what he calls the Mideast's "blood-stained sands." "Russia is always on standby to fill power voids. That is how it happened that Russian troops swept in when the U.S. left northern Syria," Cheney told the Arab Strategy Forum. "To sum up that still-unfolding story: nobody will remember it as our finest hour."

<https://www.nytimes.com/aponline/2019/12/09/world/middleeast/ap-ml-emirates-cheney.html>

U.S. defense policy bill requires nuclear power inspections for Saudi Arabia: sources

Timothy Gardner, Reuters, December 10, 2019

Saudi Arabia and other countries seeking to use U.S. technology to develop nuclear power plants must agree to comprehensive U.N. inspections under legislation to be included in the defense policy bill expected to be announced as soon as early this week, two Democratic congressional aides said on Monday.

The measure, spearheaded by Democratic U.S. Representative Bradley Sherman, requires countries to sign the so-called Additional Protocol. The measure requires the International Atomic Energy Agency, the U.N.'s nuclear watchdog, to conduct snap inspections of nuclear power facilities to ensure countries are not developing materials for nuclear weapons. The language is included in the annual National Defense Authorization Act, one of the few pieces of legislation that Congress must pass every year, the two aides said. The \$700 billion NDAA bill could be announced in coming days after months of negotiations.

<https://www.reuters.com/article/us-usa-saudi-nuclear-congress/u-s-defense-policy-bill-requires-nuclear-power-inspections-for-saudi-arabia-sources-idUSKBN1YD2D4>

U.S. lawmakers reach deal on massive defense bill, eye Russia, Turkey, China

Patricia Zengerle, Reuters, December 10, 2019

U.S. lawmakers announced an agreement on Monday on a \$738-billion bill setting policy for the Department of Defense, including new measures for competing with Russia and China, family leave for federal workers and the creation of President Donald Trump's long-desired Space Force. It also calls for sanctions on Turkey over its purchase of a Russian missile defense system, and a tough response to North Korea's efforts to develop nuclear weapons.

The U.S. House of Representatives and Senate Armed Services Committees agreed on a compromise version of the National Defense Authorization Act, or NDAA, after months of negotiations. It is expected to pass before Congress leaves Washington later this month for the year-end holiday break. The legislation includes \$658.4 billion for the Department of Defense and Department of Energy national security programs, \$71.5 billion to pay for ongoing foreign wars, known as "Overseas Contingency Operations" funding, and \$5.3 billion in emergency funding for repairs of damage from extreme weather and natural disasters.

<https://www.reuters.com/article/us-usa-defense-congress/us-lawmakers-reach-deal-on-massive-defense-bill-eye-russia-turkey-china-idUSKBN1YE07K>

Pompeo says hopeful North Korea will keep commitments as Pyongyang deadline looms

Matt Spetalnick and Humeyra Pamuk, Reuters, December 11, 2019

U.S. Secretary of State Mike Pompeo said on Tuesday the Trump administration was "hopeful" North Korea will continue to

work toward denuclearization and refrain from long-range missile tests, as Pyongyang's deadline for Washington to reconsider its approach to talks looms. Speaking at a joint news conference with Russian Foreign Minister Sergei Lavrov, Pompeo also said Washington was looking for ways to talk to Pyongyang but offered no signs that the two sides were any closer to returning to the negotiating table. North Korean leader Kim Jong Un has set a year-end deadline for the United States to be more flexible in denuclearization negotiations or risk Pyongyang taking a "new path."

What exactly that path may be is unclear, but experts say North Korea could restart intercontinental ballistic missile (ICBM) testing suspended since 2017 and put the two countries back on a collision course, as they were before Kim and U.S. President Donald Trump held their first summit last year.

<https://www.reuters.com/article/us-northkorea-usa-pompeo/pompeo-says-hopeful-north-korea-will-keep-commitments-as-pyongyang-deadline-looms-idUSKBN1YE2EW>

U.S. imposes new sanctions on Iran airline over proliferation

Daphne Psaedakis and Humeyra Pamuk, Reuters, December 11, 2019

The United States on Wednesday imposed new sanctions on Iran's biggest airline and its shipping network, accusing them of transporting lethal aid and weapons of mass destruction proliferation. The new sanctions come just days after a weekend prisoner swap between the historic foes, a rare act of cooperation since tensions escalated after U.S. President Donald Trump withdrew from the 2015 Iran nuclear accord.

The U.S. State Department targeted Shanghai-based ESAIL Shipping Company, which U.S. Secretary of State Mike Pompeo said "knowingly transports illicit materials from Iran's Aerospace Industries Organization, which oversees all of Iran's missile industry" and has

worked with Iranian organizations subject to U.N. sanctions.

<https://uk.reuters.com/article/uk-usa-iran-sanctions/u-s-imposes-new-sanctions-on-iran-airline-over-proliferation-idUKKBN1YF29P>

After North Korea Hints at New Policy, U.S. Warns Against More Missile Tests

Rick Gladstone, New York Times, December 11, 2019

The United States is prepared to take “simultaneous steps” with North Korea to achieve peace on the Korean Peninsula, the American ambassador to the United Nations said Wednesday, but she also warned the North Koreans against conducting further missile tests. The ambassador, Kelly Craft, made the remarks during a meeting of the United Nations Security Council, which was called at her request over worries that North Korea could soon resume testing of its long-range missiles or perhaps even nuclear weapons, which it halted in 2017.

That moratorium was declared by North Korea’s leader, Kim Jong-un, during a period of optimistic-sounding diplomacy, punctuated by a summit meeting with President Trump in Singapore in June 2018, and two more meetings in following months. But talks between the two countries aimed at ending seven decades of hostility, and with it the elimination of Mr. Kim’s nuclear arsenal, have long been stalled.

<https://www.nytimes.com/2019/12/11/world/asia/north-korea-missile-tests-united-nations.html>

U.S. tells U.N. it is ready to be flexible in North Korea talks, warns against provocations

Michelle Nichols, Reuters, December 12, 2019

The United States is ready “to simultaneously take concrete steps” toward a deal aimed at getting North Korea to give up its nuclear and missile programs, but the Security Council must be prepared to respond to any provocations, the U.S. envoy

to the United Nations said on Wednesday.

The 15-member Security Council met on Wednesday at the request of the United States as concerns grow internationally that North Korea could resume nuclear or long-range missile testing - suspended since 2017 - because denuclearization talks between Pyongyang and Washington have stalled. “We remain ready to take actions in parallel, and to simultaneously take concrete steps toward this agreement. We are prepared to be flexible in how we approach this matter,” U.S. Ambassador Kelly Craft said. “And we recognize the need for a balanced agreement that addresses the concerns of all parties.”

<https://www.reuters.com/article/us-northkorea-usa-un/u-s-ready-to-be-flexible-with-north-korea-warns-against-provocations-trumps-u-n-envoy-idUSKBN1YF2IR>

Roof placed over first Vogtle unit

World Nuclear News, December 12, 2019

The shield building provides an additional layer of safety around the containment vessel and nuclear reactor to protect the structure from any potential impacts. The roof section is 135 feet (41 metres) in diameter, 37 feet tall and weighs two million pounds (over 900 tonnes). Its placement follows the setting of Vogtle 3’s containment vessel top earlier this year.

The first emergency preparedness exercise for Vogtle 3 and 4, including a review of the site’s plans to ensure the protection of the public, has also been completed. “The first drill helps prepare teams ahead of the Nuclear Regulatory Commission’s evaluated exercise next year and marks the continued transition from construction toward operations,” Georgia Power said. The emergency preparedness plan specifies response actions if the site were ever to experience an incident.

Construction of Vogtle unit 3 began in March 2013 and unit 4 in November the same year. Southern Nuclear and Georgia Power, both subsidiaries of Southern Company, took over management of the

construction project in 2017 following Westinghouse's Chapter 11 bankruptcy. Vogtle 3 is scheduled to enter service by November 2021 and unit 4 by November 2022. Major systems testing began in November at Vogtle 3 in preparation for cold hydro testing and hot functional testing next year.

<http://world-nuclear-news.org/Articles/Reop-placed-over-first-Vogtle-unit>

U.S. warns North Korea against 'ill-advised behavior' as deadline looms

Matt Spetalnick and Jane Chung, Reuters, December 12, 2019

The United States warned North Korea on Thursday against any resumption of "unfortunate ill-advised behavior" after Pyongyang raised international concerns by setting an end-of-year deadline for Washington to reconsider its diplomatic approach. Assistant Secretary of State David Stilwell said that "we have heard threats before," when asked whether Washington was concerned about a return to long-range missile tests by North Korea, which has vowed to take an unspecified "new path" if the United States is not more flexible in stalled nuclear talks.

It criticized the United States for convening a U.N. Security Council meeting on Wednesday, calling it a "foolish thing" that would help Pyongyang make a clear decision on which path it would take. "The U.S. talks about dialogue, whenever it opens its mouth, but it is too natural that the U.S. has nothing to present before us though dialogue may open," a North Korean Foreign Ministry representative said in a statement carried by the state news agency, KCNA.

<https://www.reuters.com/article/us-northkorea-usa/u-s-warns-north-korea-against-ill-advised-behavior-as-deadline-looms-idUSKBN1YG10L>

US: NKorea missile tests are 'deeply counterproductive'

Edith M. Lederer and Jennifer Peltz, AP News, December 12, 2019

The United States warned North Korea

Wednesday that its "deeply counterproductive" ballistic missile tests risk closing the door on prospects for negotiating peace but said it is "prepared to be flexible" and take concrete, parallel steps with Pyongyang toward an agreement. U.S. Ambassador Kelly Craft delivered the message at a Security Council meeting less than three weeks before North Korean leader Kim Jong Un's end-of-December deadline for the Trump administration to come up with new proposals to revive nuclear diplomacy

Negotiations faltered after the U.S. rejected North Korean demands for broad sanctions relief in exchange for a partial surrender of the North's nuclear capabilities at Kim's second summit with U.S. President Donald Trump last February. North Korea has carried out 13 ballistic missile launches since May to pressure Washington, and has hinted at lifting its moratorium on nuclear and long-range missile tests if the Trump administration fails to make substantial concessions before the new year.

<https://apnews.com/cfea48ffcf672272e415d78f7ba8a554>

Pentagon Tests Long-Banned Ballistic Missile Over Pacific

VOA, December 13, 2019

The Pentagon on Thursday flight-tested a missile that had been banned under a treaty that the United States and Russia abandoned last summer. Some U.S. arms control advocates said the test risks an unnecessary arms race with Moscow. The prototype missile was configured to be armed with a non-nuclear warhead. The Pentagon declined to disclose specifics beyond saying the missile was launched from a "static launch stand" at Vandenberg Air Force Base in California and landed in the open ocean. The Defense Department said the ballistic missile flew more than 500 miles.

The test comes amid growing uncertainty about the future of arms control. The last remaining treaty limitation on U.S. and Russian nuclear weapons - the New

START treaty of 2010 - is scheduled to expire in February 2021. That treaty can be extended for as long as five years without requiring a renegotiation of its main terms. The Trump administration has indicated little interest in doing so.

<https://www.voanews.com/usa/pentagon-tests-long-banned-ballistic-missile-over-pacific>

SMR design review enters final phases

World Nuclear News, December 13, 2109

“The completion of Phase 4 of the NRC’s design review certification process is an unprecedented step forward for our company and for the advanced nuclear industry overall,” NuScale Chairman and CEO John Hopkins said. “We appreciate the tremendous effort the US Nuclear Regulatory Commission has dedicated to its thorough and rigorous review of our groundbreaking technology thus far.”

NuScale’s SMR design features a fully fabricated power module based on pressurised light water reactor technology. Each module can generate up to 60 MWe, and the scalable design can be used in power plants of up to 12 individual modules. It is the first - and so far only - SMR to undergo a design certification review by the NRC. This is scheduled for completion by September 2020, and a 12-module NuScale plant at a site at the Idaho National Laboratory is planned for deployment in the mid-2020s. The project to bring the reactor into production has received support from a public-private partnership with the US Department of Energy as well as from Congress.

The NRC’s design certification process is based on a review by NRC staff of the application, which addresses the various safety issues associated with the proposed nuclear power plant design, independent of a specific site. In granting a design certification, the regulator approves a nuclear power plant design, independent of an application to construct or operate a plant. A design certification is valid for 15 years from the date of issuance, but can be renewed for a further 10 to 15 years.

Completion of Phase 4 of the review represents completion of the advanced safety evaluation report (SER) with no open items, NuScale said. **Phase 5 entails a review by the NRC’s Advisory Committee on Reactor Safeguards (ACRS), an independent advisor to the regulator that reviews and reports on safety studies and reactor facility licence and licence renewal applications.** The sixth and final phase of the review is the preparation of the final SER, which will incorporate confirmatory items from the Phase 4 advanced SER, and comments raised by ACRS in Phase 5. The final SER is scheduled for completion in September 2020.

<http://world-nuclear-news.org/Articles/SMR-design-review-enters-final-phases>

U.S. envoy arrives in South Korea as Pyongyang ramps up pressure

Reuters, December 15, 2019

Stephen Biegun, the U.S. special envoy for North Korea, arrived in South Korea on Sunday as Pyongyang stepped up pressure on Washington to make concessions to revive stalled denuclearization talks ahead of a year-end deadline.

Biegun’s arrival came a day after North Korea said it made another “crucial test” at a rocket launch site to develop a strategic weapon to deter U.S. nuclear threats. Analysts said such tests could help North Korea build more reliable intercontinental ballistic missiles (ICBMs) capable of reaching the United States. Biegun did not make any comments upon arrival at an airport near Seoul on Sunday afternoon.

Biegun plans to meet with South Korean President Moon Jae-in on Monday, as part of his three-day stay before leaving for Tokyo to consult with his Japanese counterpart. It is unclear whether he will meet with North Korean officials at the inter-Korean border. Biegun’s trip led to speculation he might try to salvage negotiations by reaching out to North Korea, or by publicly sending a message.

<https://www.reuters.com/article/us-northkorea-usa-southkorea/u-s-envoy-arrives-in-south-korea-as-pyongyang-ramps-up-pressure-idUSKBN1YJ05W>

U.S. envoy Biegun to North Korea: 'We're here, you know how to reach us'

Hyonhee Shin and Sangmi Cha, Reuters, December 16, 2019

U.S. special envoy for North Korea, Stephen Biegun, urged Pyongyang on Monday to return offers of talks, dismissing leader Kim Jong Un's year-end deadline while highlighting Washington's willingness to discuss "all issues of interest". Tension has been rising in recent weeks as Pyongyang has conducted a series of weapons tests and waged a war of words with U.S. President Donald Trump, stoking fears the two countries could return to a collision course they had been on before launching diplomacy last year.

Biegun arrived in Seoul on Sunday amid speculation he might try to salvage negotiations by reaching out to North Korea, which has vowed to take an unspecified "new path" if Washington fails to soften its stance before the end of the year. "The United States does not have a deadline. We have a goal," Biegun told a joint news conference with his South Korean counterpart Lee Do-hoon. "Let me speak directly to our counterparts in North Korea. It is time for us to do our jobs. Let's get this done. We are here, and you know how to reach us," Biegun said.

<https://in.reuters.com/article/northkorea-usa-southkorea/u-s-envoy-biegun-to-north-korea-were-here-you-know-how-to-reach-us-idINKBN1YK083>

E. Europe

Iran to continue ballistic missile program despite EU warning

DW, December 5, 2019

Tehran said in a letter to the UN that it was "determined to resolutely continue" enriching uranium. This came following an

EU letter rebuking the government and a Russian firm suspending cooperation. The government of Iran issued a letter to the United Nations on Thursday, announcing its intention to go ahead with its controversial ballistic missile program. "Iran is determined to resolutely continue its activities related to ballistic missiles and space launch vehicles," Iranian UN envoy Majid Takhte Ravanchi wrote in a letter to Secretary-General Antonio Guterres.

Earlier, Iran's Foreign Minister Javad Zarif had scoffed at a letter from the UK, Germany, and France taking Tehran to task for not adhering to a 2015 landmark deal meant to curb Iranian nuclear ambitions. The letter called on Guterres to inform the Security Council in his next report that Iran's missile program is "inconsistent" with the implementation of the deal. In a tweet, Zarif called it a "desperate falsehood to cover up their miserable incompetence in fulfilling the bare minimum of their own...obligations." Tehran has criticized the EU for not fully implementing a barter mechanism the bloc said would shield Iran from some of the effects of reimposed US sanctions.

<https://www.dw.com/en/iran-to-continue-ballistic-missile-program-despite-eu-warning/a-51548273>

Europeans rap Iran for working on nuclear-capable missiles

Edith M. Lederer, AP News, December 5, 2019

France, Germany and the United Kingdom say "Iran's developments of nuclear-capable ballistic missiles" go against a U.N. Security Council resolution calling on Tehran not to undertake any activity related to such missiles. Ambassadors from the three European nations urged U.N. Secretary-General Antonio Guterres in a letter circulated Wednesday to inform the council in his next report that Iran's ballistic missile activity is "inconsistent" with the call in a council resolution endorsing the 2015 nuclear deal with Iran.

The letter cites footage released on social media April 22, 2019, of a previously

unseen flight test of a new Shahab-3 medium-range ballistic missile variant “equipped with a maneuverable re-entry vehicle.” It says: “The Shahab-3 booster used in the test is a Missile Technology Control Regime category-1 system and as such is technically capable of delivering a nuclear weapon.” The Europeans noted that a 2015 report by the International Atomic Energy Agency on possible military dimensions of Iran’s nuclear program concluded “that extensive evidence indicated detailed Iranian research in 2002-2003 on arming the Shahab-3 with a nuclear warhead.”

<https://apnews.com/9931c160da5f49e89f9ae7a78c6a4337>

Europeans again condemn North Korea’s missile launches

Taiwan Times, December 5, 2019

European countries are again condemning North Korea’s 13 sets of ballistic missile launches since May, saying they violate U.N. Security Council resolutions and undermine international security. The statement was issued Wednesday by the five European council members – Belgium, France, Germany, United Kingdom and Poland – and Estonia, which will join the council in January. It also condemns recent North Korean threats “to partners in the region and beyond.” The Europeans issued the statement after closed Security Council consultations on North Korea’s latest missile launches on Nov. 28. The 15-member council didn’t issue any statement.

<https://www.taiwannews.com.tw/en/news/3830557>

Europeans Step Up Pressure on Iran Over Nuclear Violations

Laurence Norman, The Wall Street Journal, December 6, 2019

France, Britain and Germany will trigger a dispute mechanism if Tehran continues its prohibited moves away from the nuclear deal, diplomats say. What Iran’s Breaches of the Nuclear Deal Mean for the U.S. and Europe. Tehran said it would begin enriching uranium beyond the 3.67% limit

set in a 2015 nuclear deal. The WSJ explains the significance of the violation and what’s next. European powers will take the first step towards re-imposing international sanctions on Iran in the coming weeks if Tehran further violates the 2015 nuclear deal, diplomats said. The warning, an escalation of European pressure on Iran, puts the two sides on a collision course.

<https://www.wsj.com/articles/europe-poised-to-increase-pressure-on-iran-over-nuclear-deal-violations-11575625191>

Europeans, Iran to clash at nuclear talks as deal nears collapse

Aljazeera, December 6, 2019

Europeans will urge Iran to stop violating nuclear deal, but Tehran remains angered by sanctions imposed by Washington. European powers will demand at talks on Friday that Iran stop violating their nuclear deal or risk renewed UN sanctions, but with Tehran angry over a lack of European protection from US sanctions, there appeared to be scant scope for compromise. The afternoon meeting comes amid heightened friction between Iran and the West.

The Europeans and Iran clashed on Thursday over the Iranian ballistic missile programme before senior diplomats from the remaining parties to the deal - Britain, France, Germany, China and Russia - met Iranian officials in Vienna on Friday to assess the state of the nuclear agreement.

<https://www.aljazeera.com/news/2019/12/europeans-iran-clash-nuclear-talks-deal-nears-collapse-191206130035150.html>

Europe Cannot Afford to Cross Iran’s Redline on Nuclear Issue

Financial Tribune, December 8, 2019

The European signatories to the 2015 nuclear deal cannot afford to trigger sanctions snapback because it is Iran’s “redline” and would cause a collapse of the agreement and undermine security in Europe, a political analyst says. “Referring

Iran's nuclear dossier to the United Nations Security Council would spell the end of JCPOA, which would not serve Europe's security interests and will prevent them from exercising influence on regional and international developments," Morteza Maki also told IRNA in a recent interview.

US President Donald Trump last year pulled out of the nuclear accord between Iran and major powers, officially known as the Joint Comprehensive Plan of Action, under which Tehran undertook to curb its nuclear program in exchange for the lifting of sanctions.

<https://financialtribune.com/articles/national/101117/europe-cannot-afford-to-cross-irans-redline-on-nuclear-issue>

Austria seeks to preserve nuclear deal: diplomat

Tehran Times, December 11, 2019

Stefan Scholz, the Austrian ambassador to Tehran, said on Wednesday that Austria seeks to preserve the 2015 nuclear deal, formally known as the JCPOA. "The Austrian government is interested in preserving the JCPOA and we believe that Europeans must fulfil their promises and uphold Iran's economic benefits," he said during a meeting with members of Sanandaj's city council.

He noted that Austria, as a member of the European Union, is making efforts to save the JCPOA. Austria and Geneva hosted the nuclear talks between Iran, the 5+1 group, and the European Union, which led to the conclusion of the JCPOA in July 2015. Josep Borrell, the new EU foreign policy chief, said on Monday that the signatories to the nuclear deal should adopt a united stance to preserve the deal. He also said on Saturday that "collective responsibility" is needed to stop the JCPOA from breaking apart. "We have a collective responsibility to preserve #IranDeal," Borrell tweeted. A meeting of the JCPOA Joint Commission was held in Vienna on December 6. Borrell added, "Following the Joint Commission, as a coordinator, I support the call for full implementation & to reverse the recent

negative trend."

<https://www.tehrantimes.com/news/442932/Austria-seeks-to-preserve-nuclear-deal-diplomat>

F. Russia

Putin sets task to build up Russian Navy's combat potential in coming years

TASS News Agency, December 2, 2019

The Russian Navy should build up its combat potential in coming years, President Vladimir Putin said on Monday. "In the coming years, it is necessary to actively build up the Navy's combat capabilities. This largely depends on the planned delivery of frigates and submarines upgraded for employing Tsirkon hypersonic missiles to the Navy's combat structure," the Russian leader said while opening the 14th series of meetings on defense. This task requires achieving coordinated work of the government, the military command, the defense industry and research organizations, the president stressed. The hypersonic weapons in the Fleet are becoming extremely important to maintain strategic stability, Putin noted.

<https://tass.com/defense/1094735>

Kremlin: NATO on Moscow's radar only when alliance threatens Russia

TASS News Agency, December 3, 2019

The Kremlin is keeping a close eye on developments in NATO but considers the events to be the alliance's internal affairs, Kremlin Spokesman Dmitry Peskov said on Tuesday. "This is none of our business," the Kremlin spokesman said, responding to a question about internal contradictions in NATO. "It is our business when the alliance threatens the security of the Russian Federation," Peskov stressed. As the Kremlin spokesman said, "this alliance is the product of the Cold War era." "The Russian Federation never wanted this epoch to make a comeback but the alliance, which was birthed based on the ideology

of confrontation cannot, of course, offer anything else, conceptually," the Kremlin spokesman pointed out.

"In this regard, we, of course, are attentively following the processes inside the alliance and, as far as the dying away or not of any body parts are concerned, well, this is not our business," Peskov said. The Kremlin hinted at a recent statement by French President Emmanuel Macron that NATO was "brain dead" due to the absence of coordination between the United States and its European allies.

<https://tass.com/politics/1095075>

Leningrad II plant begins providing district heating

World Nuclear News, December 3, 2019

Unit 1 of Russia's Leningrad II nuclear power plant has been integrated into the heat supply system of the city of Sosnovy Bor, operator Rosenergoatom has announced. The VVER-1200 reactor will replace electricity and heating capacity lost with the closure last December of the first of four RBMK-1000 units at the nearby Leningrad plant. All major manufacturing and production companies located on the industrial park in Sosnovy Bor were the first to receive the heat produced by Leningrad II-1, Rosenergoatom said. The next stage will be to integrate the reactor's heat supply into the city's residential heating system.

The net cost of heat generated at the Leningrad nuclear plant is far lower than that produced by boiler rooms run on organic fuel, the company said. In addition, the use of nuclear-generated heat avoids the emission of carbon dioxide and has a lesser impact on the environment. "The VVER-1200 power block is a replacement for both electricity and heat capacities, and it will start delivering those as a replacement for the shutdown RBMK-1000 power block," said Dmitry Tsygankov, head of the turbine hall of Leningrad II unit 1. "The Leningrad NPP turbine hall and district heat supply boiler room teams have fully ensured reliable and trouble-free heat supply to the city and

the industrial park using a high-capacity power block that can output twice as much as an RBMK block."

<https://www.world-nuclear-news.org/Articles/Leningrad-II-plant-begins-providing-district-heat>

Russia awards contract to build BREST reactor,

World Nuclear News, December 5, 2019

Siberian Chemical Combine (SCC) has awarded a RUB26.3 billion (USD412 million) contract to Titan-2 for the construction and installation works for the BREST-OD-300 lead-cooled fast neutron reactor facility at its site in Seversk, Russia. Siberian Chemical Plant is a subsidiary of TVEL, the nuclear fuel manufacturing subsidiary of Russian state nuclear corporation Rosatom.

BREST-OD-300 is part of Russian state nuclear corporation Rosatom's Proryv, or Breakthrough, project to enable a closed nuclear fuel cycle. The 300 MWe unit will be the main facility of the Pilot Demonstration Energy Complex (PDEC), which is in the process of construction at the Siberian Chemical Plant site. In addition, the PDEC demonstrate an on-site closed nuclear fuel cycle with a facility for the fabrication/re-fabrication of mixed uranium-plutonium nitride nuclear fuel, as well as a used fuel reprocessing facility.

According to the newly announced contract, Titan-2 will build the reactor building, turbine hall and related infrastructure facilities for the power unit, with completion scheduled before the end of 2026. Vitaly Khadeev, vice president for the development of closed nuclear fuel cycle technologies and industrial facilities at TVEL, said the project will create more than 800 new jobs in Seversk. Titan-2 Holding, a Russian group of engineering companies, is the general contractor for construction of new nuclear power units at the Leningrad nuclear power plant in Russia, and its subsidiaries are also engaged in the Hanhikivi and Akkuyu

nuclear power plant construction projects in Finland and Turkey, respectively.

<https://www.world-nuclear-news.org/Articles/Russia-awards-contract-to-build-BREST-reactor>

Putin says Russia ready to extend New START nuclear arms treaty

Reuters, December 5, 2019

Russia is ready to extend the New START nuclear arms control treaty by the end of this year without any more conditions or discussion, President Vladimir Putin said on Thursday, appearing to drop Moscow's earlier defiant tone. The New START accord, signed in 2010, limits the number of strategic nuclear warheads that Washington and Moscow can deploy. Its fate has been in the spotlight since Washington pulled out of another key arms accord in August, citing violations by Russia that Moscow denies.

"Russia is not interested in starting an arms race and deploying missiles where they are not present now," Putin told officials in a meeting. "Russia is ready to immediately, as soon as possible, by the end of this year, without any preconditions, extend the START Treaty so that there would be no further double or triple interpretation of our position," Putin said.

<https://www.reuters.com/article/us-russia-usa-missiles/putin-says-russia-ready-to-extend-new-start-nuclear-arms-treaty-idUSKBN1Y923K>

Russia suspends revamp work at Iran's Fordow nuclear plant

Reuters, December 5, 2019

Russian state nuclear company Rosatom has suspended work on revamping a factory at Iran's Fordow nuclear complex due to an issue with uranium compatibility, Rosatom's nuclear fuel cycle unit TVEL said on Thursday. "Uranium enrichment and the production of stable isotopes cannot be carried out in the same room," TVEL said in a statement, adding that it was "technologically impossible" to implement the project at this time.

TVEL said specialists have been working on

a project since 2017 to modify centrifuge cascades to produce two stable isotopes that can be used for medicinal purposes. But it said their efforts have been thwarted by traces of uranium in the air and on the equipment. "To resume this work, we must stop and dismantle the cascades, where uranium enrichment takes place and thoroughly clean the premises and equipment," said TVEL, which specializes in uranium mining and production of nuclear fuel. "Until these conditions are met, works on the project from the Russian side are suspended." TVEL said the Iranian side had been informed of its decision.

<https://www.reuters.com/article/us-iran-nuclear-russia/russia-suspends-revamp-work-at-irans-fordow-nuclear-plant-idUSKBN1Y91WU>

Putin fears the US and NATO are militarizing space and Russia is right to worry, experts say

Holly Ellyatt, CNBC, December 5, 2019

Russian President Vladimir Putin warned Wednesday that the U.S. saw space as a "theater of military operations" and that the development of the U.S. Space Force posed a threat to Russia. "The U.S. military-political leadership openly considers space as a military theater and plans to conduct operations there," Putin said at a meeting with defense officials in Sochi, according to Russian news agency TASS. "For preserving strategic supremacy in this field the United States is accelerating creation of its space forces, which are already in the process of operative preparations," Putin said, adding that the world's leading countries are fast-tracking the development of modern military space systems and dual purpose satellites and that Russia needed to do the same. "The situation requires us to pay increased attention to strengthening the orbital group, as well as the rocket and space industry as a whole."

Russia opposed the militarization of space, Putin insisted, but said "at the same time the march of events requires greater

attention to strengthening the orbital group and the space rocket and missile industry in general.”

<https://www.cnn.com/2019/12/05/nato-in-space-putin-is-worried-about-the-militarization-of-space.html>

Three out of four icebreakers for Northern Sea Route may be decommissioned by 2030

TASS News Agency, December 6, 2019

Only one of four existing nuclear-powered icebreakers, which now take vessels along the Northern Sea Route, will continue service after 2030 - The 50 Let Pobedy. The other icebreakers will be decommissioned, Deputy Director General of the nuclear fleet authority, Atomflot, Leonid Irlitsa told the Arctic: Present and Future international forum. “The nuclear-powered icebreaker fleet is getting old, and by 2020 we shall have to stop the old Soviet-time fleet of icebreakers,” he said.

His presentation’s slides showed the Taimyr (commissioned in 1989) and the Yamal (commissioned in 1992) may be decommissioned by 2029, and the Vaygach (in service since 1990) - by 2028. The 50 Let Pobedy icebreaker (commissioned in 2007) will continue working to 2041.

<https://tass.com/economy/1096397>

Russia suspends Fordow project in Iran

World Nuclear News, December 6, 2019

TVEL has announced the suspension of its work to upgrade the Fordow Fuel Enrichment Plant because Iran fed uranium hexafluoride (UF₆) into two gas centrifuge cascades located in the same room as the cascades meant to be reengineered for stable medical isotope production. Iran’s action followed its withdrawal from some of the obligations under the Joint Comprehensive Plan of Action (JCPOA), and TVEL’s announcement yesterday came on the eve of the next round of talks between Iran and the JCPOA signatories at the International

Atomic Energy Agency’s headquarters in Vienna.

TVEL, the nuclear fuel manufacturer subsidiary of Russian state nuclear corporation Rosatom, said it was “technologically impossible” to implement the Fordow project at this time. Uranium enrichment and stable medical isotope production cannot be sustained in the same room because air and equipment are exposed to UF₆ “leftovers”, making the produced stable medical isotopes unsuitable for medical purposes, TVEL said. “To resume this work, it will be necessary to stop and dismantle the cascades in which uranium enrichment takes place and to thoroughly clean the premises and equipment. Until these conditions are met, work on the project from the Russian side has been suspended,” it said.

Since 2017, TVEL has been engaged in modifying two gas centrifuge cascades at the Fordow facility, intended for producing stable isotopes (xenon and tellurium) for medical purposes. The works were carried out in compliance with the JCPOA dated 14 July 2015. The International Atomic Energy Agency and the JCPOA Joint Commission were regularly updated on project progress, TVEL said.

<https://www.world-nuclear-news.org/Articles/Russia-suspends-Fordow-project-in-Iran>

Russia says will respond to U.S. on missile deployment

Reuters, December 6, 2019

Foreign Minister Sergey Lavrov said on Friday that Russia will not hesitate to respond to any new deployment of missiles by the United States. “We will have a mirror reaction”, Lavrov said. “Every step will have a Russian reaction,” Lavrov said at a news conference in Rome with his Italian counterpart, speaking through an Italian interpreter. Russia has proposed a moratorium on the deployment of short and intermediate-range nuclear missiles in Europe after the Intermediate-

range Nuclear Forces Treaty (INF) banning such a move formally ended in August.

<https://www.reuters.com/article/us-russia-usa-missiles/russia-says-will-respond-to-u-s-on-missile-deployment-idUSKBN1YA1QC>

Russian Foreign Minister Likely to Discuss Nuclear Arms With Trump and Pompeo

David E. Sanger, The New York Times, December 7, 2019

The last time President Trump met in the Oval Office with Sergey V. Lavrov, the Russian foreign minister, it did not go so well. Mr. Trump had just fired James B. Comey, the F.B.I. director, and exulted about the move to Russia's top diplomat. Then he told Mr. Lavrov and Sergey I. Kislyak, who then was finishing a tour as Russia's ambassador to Washington, about the penetration of an Islamic State group working to make explosives that fooled airport X-ray machines by looking like batteries for laptop computers. That disclosure blew an important intelligence source for Israel, which had kept its operation to get inside ISIS a secret — and was outraged by Mr. Trump's indiscretion.

In any other presidency that would seem uncontroversial. Democrats and Republicans on Capitol Hill have largely agreed that extending the accord would be good, avoiding a nuclear arms race at a time of heightened tension with Mr. Putin's government over Ukraine, Crimea and Russia's efforts to manipulate American elections. The treaty, which is set to expire in February 2021, right after the next presidential inauguration, limits both sides to around 1,550 deployed strategic nuclear weapons, though that leaves out smaller tactical weapons and does not cover a range of other non-nuclear weaponry that can wreak havoc.

<https://www.nytimes.com/2019/12/09/world/europe/lavrov-trump-pompeo-nuclear.html>

Russia to test robot for radioactive waste disposal in early 2020

TASS News Agency, December 9, 2019

A new anthropomorphic robot that will handle waste disposal in radioactive canyons will be tested in Russia in early 2020, said Android Technology Executive Director Evgeniy Dudorov on Monday. "Now the robot is being manufactured. At the beginning of next year, testing will already take place," Dudorov said. The robot will be suspended on a special boom; the machine will be connected to the network using wires.

The anthropomorphic robot will be controlled with the help of a master suit, which in copy mode will transmit the movement to the android from the operator. This control plan was previously worked out by the Android Technology on the robot named Feodor, for which the operator used a virtual reality helmet to see through the eyes of the android. As Dudorov explained, in the future the robot will be able to work autonomously.

<https://tass.com/economy/1097063>

Russia ready to consider US nuclear disarmament proposals — source

TASS News Agency, December 9, 2019

Moscow is ready to consider in detail any specific nuclear disarmament proposals Washington might make, a source in the Russian Foreign Ministry told TASS. "In the context of threats being created by the United States we will do our utmost to maintain our national security. At the same time we systematically press for a resumption of the dialogue on the issue of strategic stability. Lately, Washington demonstrated its openness to this. If Donald Trump's statement of April 25 about some nuclear disarmament treaty, which he also mentioned in a conversation with Vladimir Putin on May 3, is formalized as a concrete proposal, which has not happened yet, we will be prepared to closely consider it," the source said.

The diplomat recalled that back in October 2018 Russia forwarded to the US a draft joint statement on the prevention of nuclear war and on strengthening strategic stability. It also suggested confirming that both countries “will behave in responsible way and have no intention of sliding towards a confrontation fraught with the death of humanity.”

<https://tass.com/politics/1097201>

Russia and Turkey plan grid connection for Akkuyu plant

World Nuclear News, December 10, 2019

Turkish electricity transmissions system operator TEYAP and Russian-owned JSC Akkuyu Nuklear have signed a transmission grid connection agreement for the nuclear power plant under construction in Mersin province, in southern Turkey. The agreement means that full-scale work can start on creating a power distribution system for the Akkuyu nuclear power plant, which will include six high-voltage transmission lines. The 4800 MWe plant will comprise four VVER1200 reactors and is expected to meet about 10% of Turkey’s electricity needs. Turkey aims to bring unit 1 online in 2023, the centenary of its foundation as a republic, while Turkish regulator TAEK granted JSC Akkuyu Nuklear a construction licence for unit 2 in September.

Within the framework of the agreement, the power generated by Akkuyu will be transmitted from its switchgear via 400 kV power lines to six transformer substations that are part of Turkey’s unified energy system. The total length of the high-voltage lines that will be built as part of the Akkuyu power distribution scheme will exceed 1000 km. TEYAP, which is a company under the jurisdiction of Turkey’s Ministry of Energy and Natural Resources, maintains a network of 68,204-km-long transmission lines, 736 transformer substations and 12 high-voltage transmission lines that connect Turkey with the neighbouring countries.

<https://www.world-nuclear-news.org/Articles/Russia-and-Turkey-plan-grid-connection-for-Akkuyu>

Orano to supply second Russian deconversion facility

World Nuclear News, December 11, 2019

France’s Orano will supply a second depleted uranium hexafluoride (DUF6) defluorination plant to TVEL’s JSC Electrochemical Plant (ECP) in Zelenogorsk in Russia’s Krasnoyarsk Region under a EUR40 million (USD44 million) contract awarded by Russian state nuclear corporation Rosatom. The first facility has been in operation at the site for ten years.

The contract was signed by Sergey Filimonov, director general of ECP, and Cedric Barba, vice-president for nuclear fuel cycle front end business operations at Orano Projects. Under the terms of the contract, Orano will supply the equipment for the construction of the deconversion facility, as well as providing technical assistance in its installation and commissioning. The project is expected to be completed in 2022. The plant will deconvert DUF6 - the so-called tails left behind after uranium enrichment - into uranium tetrafluoride, with anhydrous hydrofluoric acid being produced as a by-product. Deconversion transforms the toxic and somewhat corrosive gaseous DUF6 enrichment tailings into a stable powdered oxide form fit for long-term storage, transport or final disposal. The resulting DUF6 will be used, together with plutonium oxide, in the production of mixed-oxide (MOX) fuel for the BN-800 fast neutron reactor at Beloyarsk (unit 4), which entered commercial operation in October 2016.

<https://www.world-nuclear-news.org/Articles/Orano-to-supply-second-Russian-deconversion-facili>

Press review: Lavrov, Trump hash over boosting business ties and arms control proposals

TASS News Agency, December 12, 2019

US President Donald Trump said at his recent talks with Russian Foreign Minister Sergey Lavrov that he wished to increase

trade with Russia, Kommersant writes, citing a source close to the Russian delegation. The White House occupant did not explain how exactly this could be done amid Washington's sanctions against Moscow. However, over the past years, Russian-US economic ties have been really improving. Soon, the sides are expected to announce launching a bilateral Business Consultative Council, which is aimed at giving a new impetus to business dialogue between Moscow and Washington.

This autumn, Russia and the United States named persons, who will be responsible for creating this mechanism, which Russian President Vladimir Putin suggested that Trump establish back in summer 2018, the paper wrote. In particular, President of the Russian Union of Industrialists and Entrepreneurs Alexander Shokhin and Head of the US-Russia Business Council Daniel Russell will deal with this issue. They will be tasked with arranging the group's first meeting during the St. Petersburg International Economic Forum in June 2020. The launch of the council has not been officially announced.

<https://tass.com/pressreview/1098577>

Zaporozhe 5 loaded exclusively with Westinghouse fuel

World Nuclear News, December 12, 2019

The core of unit 5 at the Zaporozhe nuclear power plant in Ukraine has been fully loaded with VVER-1000 fuel produced by Westinghouse, operator Energoatom announced yesterday. In July 2018, unit 3 of the South Ukraine plant became the first VVER-1000 reactor anywhere to operate with a full core of fuel not supplied by Russia. Energoatom said a total of 163 Westinghouse-produced fuel assemblies have been loaded into the core of Zaporozhe unit 5. Three other units at the site are also operating with Westinghouse fuel. Units 3 and 4 are both operating with 84 Westinghouse assemblies within their cores, while unit 1 (currently in a scheduled maintenance outage) has 126 assemblies loaded.

"Using various sources of fuel supply, we first of all ensure the energy security of Ukraine," said Alexander Ignatchenko, deputy chief engineer for nuclear and radiation safety at the Zaporozhe plant. "With regard to the reliability of alternative fuels, the [Westinghouse] TVZ-WR shows good mechanical stability results." Energoatom said that Unit 5 will begin operating exclusively with Westinghouse-supplied fuel next year, while unit 1 will also be loaded entirely with Westinghouse fuel. Units 3 and 4 will be fully loaded with Westinghouse fuel in 2021. "A year after, subject to successful pilot operation, the use of alternative fuel will become industrial," it said.

<https://www.world-nuclear-news.org/Articles/Zaporozhe-5-loaded-exclusively-with-Westinghouse-f>

Russia raises concerns over new U.S. ballistic missile test: RIA

Reuters, December 13, 2019

Russia said on Friday it was alarmed after the United States tested a ground-launched ballistic missile that would have been banned under the Intermediate-range Nuclear Forces Treaty, the RIA news agency reported. "It alarms us. Of course, we will take this into account," said Vladimir Ermakov, head of the foreign ministry's arms control and non-proliferation department. It was the second test by the United States that would have been prohibited under the INF treaty and too place as the future of another major nuclear arms control treaty between Russia and the United States is under question.

New START, the last remaining major nuclear arms control treaty between the two countries, is due to expire in February 2021 and Moscow has warned there is already not enough time left to negotiate a full-fledged replacement.

<https://www.reuters.com/article/us-usa-military-russia/russia-raises-concerns-over-new-us-ballistic-missile-test-ria-idUSKBN1YH0S8>

Russia Developing Nuclear Arms Beyond U.S. Arsenal, U.S. Military Says

The Moscow Times, December 13, 2019

Russia is developing nuclear weapons that the United States does not yet have, a senior officer of the force that oversees the U.S. nuclear arsenal was cited by the state-run TASS news agency as saying Friday. U.S. Strategic Command deputy commander Vice Adm. Dave Kriete spoke to reporters as the U.S. tested a missile that would have been banned under a bilateral treaty it withdrew from this year. Russia said it was alarmed about the U.S. test of a ground-launched ballistic missile Thursday. "Russia continues to develop nuclear weapons that the United States does not possess," TASS quoted Kriete as saying in a Russian-language report from Washington. "Our goal isn't to keep up with Russia and engage in an arms race [but to engage] in proper deterrence," Kriete reportedly said.

The U.S. test was its second such exercise after withdrawing this August from the 1987 Intermediate-Range Nuclear Forces (INF) Treaty that would have banned the missile. Washington withdrew from the INF after accusing Moscow of violating the treaty, a claim the Kremlin has denied.

<https://www.themoscowtimes.com/2019/12/13/russia-developing-nuclear-arms-beyond-us-arsenal-us-military-says-a68615>

US missile test confirms INF Treaty was ruined at Washington's initiative – Kremlin

TASS News Agency, December 13, 2019

Thursday's test of a ballistic missile carried out by the United States was evidence that Washington intended to ruin the Intermediate Nuclear Forces Treaty, Russian Presidential Spokesman Dmitry Peskov said. "We've said more than once that the United States has been making preparations for violating the INF Treaty. This [missile test] clearly confirms that the treaty was ruined at the initiative of the United States," Peskov told the media on Friday.

"I'm not in the position to make any comments [on the missile test] from the technical standpoint and the missile's parameters and characteristics," he added. On December 12, the US Department of Defense carried out a flight test of the ground-based ballistic missile (non-nuclear configuration) at the US Air Force base Vandenberg, California. Until just recently Russia and the United States had been prohibited from developing such weapons in accordance with the INF Treaty. This agreement lost force on August 2 following the United States' unilateral pullout.

<https://tass.com/politics/1099053>

West Asia

G. Iran

Setting Iran deadlines 'might not be the best idea': new IAEA chief

Francois Murphy, Reuters. December 3, 2019

Setting Iran deadlines to explain how uranium particles were found in an undeclared Tehran warehouse could be counter-productive, the new U.N. nuclear watchdog chief said on Tuesday, hoping fresh dialogue will resolve the months-long standoff. Rafael Grossi, a 58-year-old career diplomat from Argentina, took over as director general of the International Atomic Energy Agency on Tuesday. Arguably the biggest challenge he and his agency face is policing Iran's nuclear deal with major powers. Tehran has so far failed to provide a satisfactory explanation for the uranium traces found by IAEA inspectors at a site that Israeli Prime Minister Benjamin Netanyahu pointed them to, calling it a "secret atomic warehouse". In September the IAEA's acting chief told Iran that "time is of the essence", but there has been no sign of improved cooperation by Tehran since then.

<https://www.reuters.com/article/us-un-nuclear-chief/setting-iran-deadlines-might-not-be-the-best-idea-new-iaea-chief-idUSKBN1Y729X>

Iran says still ready for talks if US lifts sanctions

Saudi Gazette, December 4, 2019

Iran is willing to return to the negotiating table if the United States first drops sanctions, President Hassan Rohani said on Wednesday, after a fuel price hike sparked deadly violence ahead of elections. European countries have been pushing for talks with Iran to salvage a 2015 nuclear deal that has all but collapsed since the United States withdrew and reimposed sanctions last year. Rohani has long demanded the lifting of US sanctions for Iran's return to talks under the auspices of the so-called P5+1 that reached the deal – the five veto-wielding permanent members of the UN Security Council plus Germany.

His latest statement comes after a shock announcement in mid-November that the price of petrol was going up by as much as 200 percent triggered demonstrations across Iran that turned deadly. The decision came at a sensitive time ahead of a February parliamentary election. It is a rise many Iranians can ill afford in a country whose sanctions-hit economy is expected to contract by 9.5 percent this year.

<http://saudigazette.com.sa/article/584168/World/Mena/Iran-says-still-ready-for-talks-if-US-lifts-sanctions>

Russia suspends revamp work at Iran's Fordow nuclear plant

Reuters, December 5, 2019

Russian state nuclear company Rosatom has suspended work on revamping a factory at Iran's Fordow nuclear complex due to an issue with uranium compatibility, Rosatom's nuclear fuel cycle unit TVEL said on Thursday. "Uranium enrichment and the production of stable isotopes cannot be carried out in the same room," TVEL said in a statement, adding that it was "technologically impossible" to implement the project at this time.

In November, the United States said it would cease waiving punitive sanctions related to the Fordow plant from Dec. 15 - a move

Russia condemned - after Tehran resumed uranium enrichment at the underground site in contravention of a nuclear deal it signed with world powers in 2015. European countries have tried to salvage the nonproliferation agreement, which requires Iran to restrain its enrichment program, but Tehran has increasingly distanced itself from the accord since the United States withdrew last year.

<https://www.reuters.com/article/us-iran-nuclear-russia/russia-suspends-revamp-work-at-irans-fordow-nuclear-plant-idUSKBN1Y91WU>

Iran working on nuclear-capable missiles: European powers

Saudi Gazette, December 6, 2019

Britain, France and Germany have accused Iran of developing nuclear-capable ballistic missiles in a letter dismissed by Iranian Foreign Minister Javad Zarif on Thursday as "a desperate falsehood".

UN ambassadors for the three countries said in the letter to UN Secretary General Antonio Guterres that Iran's actions were "inconsistent" with the UN resolution enshrining a 2015 nuclear deal with Iran. But Zarif on Twitter said the Europeans were covering up their own "miserable incompetence" at abiding by the nuclear deal and were "bowing to US bullying".

The letter referred to footage shared on social media in April this year of the test flight of a new Shabab-3 medium range ballistic missile variant that was "technically capable of delivering a nuclear weapon". The European powers also pointed to three other launches this year, including that of the Borkan-3, a new medium-range ballistic missile tested by Iranian-backed Houthi militia in Yemen on Aug. 2, 2019. The letter, dated Nov. 21, 2019 said these flights were "the latest in a long series of advances in Iranian ballistic missile technology".

<http://saudigazette.com.sa/article/584294/World/Europe/Iran-working-on-nuclear-capable-missiles-European-powers>

Iran nuclear deal parties meet as accord nears collapse

The Independent, December 6, 2019

The remaining signatories to the faltering Iran nuclear deal began crunch talks in Vienna Friday with questions over the survival of the landmark agreement after Tehran vowed to continue to breach the deal's limits on its nuclear programme. Envoys from Britain, France, Germany, China, Russia and Iran are taking part in the meeting, which is the first time the six parties gather in this format since July. Since May, Iran has taken a series of measures, including stepping up uranium enrichment, in breach of the 2015 deal, with another such move likely in early January.

Iran insists that under the agreement it has the right to take these measures in retaliation for the US's withdrawal from the deal in 2018 and reimposition of crippling sanctions. Since last month, European members have in turn begun raising the possibility of triggering the so-called "dispute resolution mechanism" foreseen in the accord, which could lead to the resumption of UN sanctions on Iran. On the eve of what was already likely to be a strained meeting, Britain, France and Germany accused Iran of developing nuclear-capable ballistic missiles, in a letter to the UN on Thursday. Iranian Foreign Minister Javad Zarif dismissed the allegation as "desperate falsehood". Despite the mounting tension observers say Britain, France and Germany are unlikely to trigger the dispute resolution mechanism on Friday.

<http://www.theindependentbd.com/post/226835>

Iran President Rouhani may visit Japan on December 19 - Jiji

Reuters, December 10, 2019

Iranian President Hassan Rouhani may visit Japan on Dec. 19 for talks with Japanese Prime Minister Shinzo Abe, Jiji News reported on Tuesday. Abe said on Monday that Tokyo is in discussions about the visit in an attempt to try to resolve Iran's nuclear impasse with the United States.

<https://in.reuters.com/article/iran-china/iran->

president-rouhani-may-visit-japan-on-december-19-jiji-idINKBN1YE0WR

IAEA chief vows to act fairly towards Tehran

Tehran Times, December 10, 2019

Rafael Grossi, the new director general of the International Atomic Energy Agency, has promised to act fairly and independently towards Tehran. Grossi said on Monday that he would not allow discrimination in any case and would like to rely on cooperation with Iran, Press TV reported. "We will not allow discrimination and bias against Iran," he said. "I will be very determined and very fair. I will not be undecided as to the implementation of liabilities."

Grossi added that he would rely on the information provided by the agency's inspectors, who monitor Iran's commitment to its obligations under the 2015 nuclear deal, officially called the Joint Comprehensive Plan of Action (JCPOA). He explained that he has no intention to introduce a new methodology, saying the agency would continue its work as before. Grossi met with Iranian Deputy Foreign Minister Abbas Araghchi in Vienna on Friday. Araghchi was in Vienna to participate in the joint commission of the JCPOA.

Since assuming the post, Grossi has repeatedly voiced his determination to cooperate with Iran. "I'm the new kid on the block in this relationship. They've been there, now they get a new DG, so we have to sit down together, start talking and take it from there," he said last week. "Let me start my conversation with Iran. I don't think it would be appropriate, and it would be unfair, to pronounce myself about their attitudes before I sit down with them." He has also said he will be "firm but fair" on inspections generally, including in Iran, without spelling out what that means. He told Reuters he is satisfied with the work the IAEA's inspections team has been doing. Grossi was appointed as the new director-general of the IAEA in October, following the

death of the previous chief Yukiya Amano in July.

<https://www.tehrantimes.com/news/442893/IAEA-chief-vows-to-act-fairly-towards-Tehran>

EU chief urges united stance to preserve nuclear deal

Tehran Times, December 10, 2019

Josep Borrell, the new EU foreign policy chief, said on Monday that the signatories to the 2015 nuclear deal, officially known as the JCPOA, should adopt a united stance to preserve the deal. “[The JCPOA Joint Commission] meeting on Friday showed that all sides support this agreement and seek to preserve it. This united stance is very important to us,” IRNA quoted him as saying at a press conference after a meeting with the EU foreign ministers in Paris. Borrell said on Saturday that “collective responsibility” is needed to stop the JCPOA from breaking apart. “We have a collective responsibility to preserve #IranDeal,” he tweeted on Saturday. Borrell added, “Following the Joint Commission, as a coordinator, I support the call for full implementation & to reverse the recent negative trend.”

<https://www.tehrantimes.com/news/442907/EU-chief-urges-united-stance-to-preserve-nuclear-deal>

US hopeful for Iran prisoner talks but imposes new sanctions

Saudi Gazette, December 11, 2019

US Secretary of State Mike Pompeo said on Wednesday he hoped for further dialogue with Iran to free prisoners but announced new sanctions as he vowed no let-up in pressure. Iran has also voiced a willingness for more prisoner swaps after the exchange Saturday of Xiyue Wang, a US scholar detained since 2016, for Massoud Soleimani, an Iranian scientist detained in the United States since last year. “I do hope that the exchange that took place will lead to a broader discussion on consular affairs. We still have Americans held in Iran — too many, for sure.” Pompeo told reporters.

Pompeo said the United States will “follow every even tiny opening” to free the at least handful of Americans known to be in Iranian custody. “I hope it portends well for this. We have had some indication that may be the case, but I don’t want to overstate that and I don’t want to give false optimism about that pathway,” Pompeo said. Pompeo, however, said the United States would not deviate from its campaign of trying to strangle Iran’s economy through sanctions.

<http://saudigazette.com.sa/article/584751/World/Mena/US-hopeful-for-Iran-prisoner-talks-but-imposes-new-sanctions>

Guterres says UN is unable to verify weapons used in Saudi oil attack were from Iran

Tehran Times, December 11, 2019

United Nations Secretary General Antonio Guterres said on Tuesday that the UN is “unable to independently corroborate” that missiles and drones used in attacks on Saudi oil facilities in September “are of Iranian origin”. “At this time, it is unable to independently corroborate that the cruise missiles and unmanned aerial vehicles used in these attacks are of Iranian origin,” he wrote in the report, seen by Reuters. Yemenis launched drone attacks on Saudi Arabia’s oil installations on September 14, disrupting half of the country’s oil supply.

Washington and Riyadh claimed Iran was behind the attacks. Tehran has said blaming Iran for the attack is part of a larger game against Iran in line with Trump’s “maximum pressure” campaign against Tehran. Iranian Foreign Minister Mohammad Javad Zarif said in September that “even the Saudis themselves don’t believe the fiction of Iranian involvement” in the attacks on the Aramco oil facilities, citing Saudi Arabia’s retaliation attack on Hodaideh in Yemen as a reason. In a post on his Twitter account, Zarif said it was “curious” that the Saudis, who had blamed Iran for the September 14 air raids on two major Saudi oil facilities, had

retaliated against Hodaideh in violation of a UN-brokered ceasefire agreement signed in Stockholm in December 2018.

“Since the Saudi regime has blamed Iran – baseless as that is – for the attacks on its oil facilities, curious that they retaliated against Hodaideh in Yemen today – breaking a UN ceasefire. It is clear that even the Saudis themselves don’t believe the fiction of Iranian involvement.” In a letter to the UN Security Council, Iranian Ambassador to the United Nations Majid Takht Ravanchi said, “It has become a standard practice of certain officials of the United States who, following any incident – no matter where and by whom – without exception, immediately and without any investigation and evidence, declare Iran as the culprit.” Takht Ravanchi added, “This ‘maximum deception’ campaign is in line with and a living example of the so-called ‘maximum pressure’ policy of the United States against Iran.”

<https://www.tehrantimes.com/news/442913/Guterres-says-UN-is-unable-to-verify-weapons-used-in-Saudi-oil>

IRGC chief: It is wrong to think Iranians will surrender under increasing economic pressure

Tehran Times, December 13, 2019

Chief of the Islamic Revolution Guards Corps (IRGC) has warned the enemies to put an end to their anti-Iran plots or face consequences. “We tell you that if you do not abandon (your hostile acts), we will set fire to your interests,” Tasnim quoted Major General Hossein Salami as saying on Thursday. He also warned that Iran will take revenge against any hostile act. Salami said the enemy is wrong to think it can coerce Iranians to surrender by increasing economic pressure.

The more the pressure, he said, the stronger the people’s determination will become to resist the enemy. The more the pressure, Salami says, the stronger the people’s determination will become to resist the enemy.

U.S. President Donald Trump has adopted a maximum pressure policy against Iran since he walked away from the JCPOA. The policy includes sanctions on Iran’s economy, especially its oil exports, and bans on top Iranian figures and organizations. At the same time, the U.S. president has pushed for talks with Tehran.

<https://www.tehrantimes.com/news/442969/IRGC-chief-It-is-wrong-to-think-Iranians-will-surrender-under>

Iran can give response if attacked: Nasrallah

Tehran Times, December 13, 2019

The Secretary-General of the Lebanese Hezbollah Resistance Movement Hassan Nasrallah warned of US plots for Lebanon, Iran and the region. Addressing the Lebanese people on Friday about the latest developments in the country, he said “I call on the Lebanese to be conscious and not have trust in US promises and claims.” “US is extorting the Lebanese people by putting them in front of two choices either surrender to its goals or financial collapse,” Almanar quoted him as saying.

Israel knows that if Hezbollah wants to take the role of the government it would have taken action against its violation of the wall-building on the border and the violation in the sea, he said. “US is trying to show Hezbollah as a threat to Lebanon,” he said, adding that Washington “is defending its own interests and Israel’s interests not the interests of the Lebanese people.” He highlighted blunt US intervention in any reformation calls as attempts to implement its own agenda. Elsewhere, he added that “Many media outlets, specifically Gulf ones were claiming that Hezbollah and Amal movement members are attacking here and there. I assure you that this is false and our leaderships have not taken any decision to take action against any offenses.”

<https://www.tehrantimes.com/news/442985/Iran-can-give-response-if-attacked-Nasrallah>

Resolution 2231 imposes no ban on Iran's missile tests: spokesman

Tehran Times, December 14, 2019

Foreign Ministry spokesman Abbas Mousavi has argued that the United Nations Security Council Resolution 2231 imposes no ban on Iran's missile tests. During a presser in the northwestern city of Tabriz on Saturday, Mousavi criticized some Western countries' position on Iran's missile tests, Tasnim reported. He said the 2015 Iran nuclear deal, also known as the Joint Comprehensive Plan of Action (JCPOA), has nothing to do with missile tests.

The JCPOA was struck between Iran and six world powers, including the U.S., Russia, China, France, Britain, and Germany, on July 14, 2015. However, Donald Trump unilaterally withdrew the U.S. from the deal in May 2018 and adopted what his administration called the policy of "maximum pressure" to force Tehran into writing another deal.

Only nuclear issues were discussed with the world powers during the negotiations that led to the JCPOA, Mousavi stated. Noting that they unsuccessfully tried to raise the issue of missiles in the negotiations, he underlined that Resolution 2231 has not banned Iran from missile tests and they are well aware of it. "We regard statements about Iran's missile tests as meddling and reject them," the spokesman added. Resolution 2231, adopted unanimously by the UN Security Council in July 2015, endorsed the Iran nuclear agreement. While the resolution "calls upon" Iran not to test nuclear-capable missiles, it does not ban Iran to conduct missile tests. Back in December 2018, Iranian Foreign Minister Mohammad Javad Zarif said Resolution 2231 and the JCPOA do not restrict Iran's missile program.

<https://www.tehrantimes.com/news/443012/Resolution-2231-imposes-no-ban-on-Iran-s-missile-tests-spokesman>

Malaysian PM calls U.S. sanctions on Iran a 'form of dictatorship'

Tehran Times, December 15, 2019

Malaysian Prime Minister Mahathir Mohamad has said that Washington's sanctions against Iran are a "form of dictatorship". "We don't believe in applying sanctions to force countries to accept certain ideologies and to change governments. It is not only the particular country that will suffer, but all the trading partners also will suffer economically. In a way, it is a form of dictatorship. A dictatorship that is worse than that in a country, it is international," he told Aljazeera in an interview published on Sunday.

He added that Malaysia lost out on a big market when the U.S. applied sanctions against Iran. He also discussed the state of the global economy and its interconnectedness. He argued the U.S. is leading the world in the wrong direction when it comes to multilateralism. "Becoming very nationalist is good. But not at the expense of other people. Every country should care about itself but that needing to be protective or secure doesn't mean confronting others. It's better if we learn to work together," he said.

"We were going a long way towards multilateralism. But now nationalism seems to affect many countries," he added. According to Reuters, Mahathir said during a speech at the Doha Forum on Saturday that the U.S. sanctions on Iran violate the United Nations charter and international law. "Malaysia does not support the reimposition of the unilateral sanctions by the U.S. against Iran," he said. "Such sanctions clearly violate the United Nations charter and international law; sanctions can only be applied by the United Nations in accordance with the charter," he added.

<https://www.tehrantimes.com/news/443056/Malaysian-PM-calls-U-S-sanctions-on-Iran-a-form-of-dictatorship>

H. Saudi Arabia

Saudi Arabia opens doors to 'naturalize' outstanding talents

Reuters, December 5, 2019

In a step aimed at attracting creative people from all over the world to live in Saudi Arabia, Custodian of the Two Holy Mosques King Salman has ordered the facilitation of process for the naturalization of outstanding talented people, Sabq daily has reported. The King's order includes giving Saudi citizenship for talented people who excel in Shariah, medical, scientific, cultural, sports, technical and technological fields such that they will be productive and contributing citizen. They will also be instrumental in pushing forward the wheel of development and benefit the nation in different fields..

The royal order stipulates naturalizing outstanding, distinguished and creative people in various fields, including forensic science, medical science, pharmacology, mathematics, computers, technology, agriculture, nuclear and renewable energy, industry, oil and gas, artificial intelligence, Internet of Things, applications, big data, software engineering, robotics, high performance computers, nanotechnology, environment, geology, aerospace and aviation.

<http://saudigazette.com.sa/article/584278/SAUDI-ARABIA/Saudi-Arabia-opens-doors-to-naturalize-outstanding-talents>

Iran's threat to the region can no longer be tolerated: Al-Jubeir

Saudi Gazette, December 6, 2019

Minister of State for Foreign Affairs Adel Al-Jubeir said, "Iran is a threat to the entire region and its aggression can no longer be tolerated." Al-Jubeir made these comments during a discussion at the Mediterranean Dialogues Conference on the future of the Mediterranean here on Friday. Tehran believes in exporting revolution, Al-Jubeir added, saying it does not respect other countries' sovereignty. Al-Jubeir called on other countries to be tough on Iran, adding that it must be deprived of the tools it uses

to threaten the region and the world. Iran is spending hundreds of thousands of dollars to build its nuclear weapons, but it doesn't take care of its people, he added.

"Nobody is talking about a regime change in Iran. The solution is to have a negotiating table and agree on a better JCPOA, stop of interference into other countries and behaviors towards terrorism," Al-Jubeir said. Tehran believes in exporting revolution, Al-Jubeir added, saying it does not respect other countries' sovereignty. Al-Jubeir called on other countries to be tough on Iran, adding that it must be deprived of the tools it uses to threaten the region and the world. Iran is spending hundreds of thousands of dollars to build its nuclear weapons, but it doesn't take care of its people, he added. "Nobody is talking about a regime change in Iran. The solution is to have a negotiating table and agree on a better JCPOA, stop of interference into other countries and behaviors towards terrorism," Al-Jubeir said.

<http://saudigazette.com.sa/article/584356/SAUDI-ARABIA/Irans-threat-to-the-region-can-no-longer-be-tolerated-Al-Jubeir>

I. Israel

Netanyahu presses Pompeo for more pressure on 'tottering' Iran

December 5, 2019

Israeli Prime Minister Benjamin Netanyahu met with US Secretary of State Mike Pompeo in Portugal on Wednesday and called for increased pressure on the "tottering" Iranian government. "I think we have been fortunate that President Trump has led a consistent policy of pressure against Iran. Iran's aggression is growing, but its empire is tottering," Netanyahu said in Lisbon. "And I say, let's make it totter even further," he added.

Netanyahu stressed that Iran was the main subject of his meeting with Pompeo, adding "the second subject is Iran, and so is the third". Pompeo, in a tweet, said it had been a "productive meeting".

"We discussed efforts to counter Iran's destabilizing influence in the region, the importance of economic cooperation with regional partners and other issues related to Israel's security," he added. The question of how to create Middle East stability when "there are anti-Iran protests taking place in Baghdad, anti-Iranian protests taking place in Beirut," was a key issue in talks held on the margins of a NATO summit which ended in London earlier Wednesday, Pompeo told reporters before leaving Lisbon. Israel, which is widely believed to have the Middle East's sole but undeclared nuclear arsenal, has for years accused Iran of seeking to obtain nuclear weapons and strongly opposed a 2015 agreement designed to address the concerns of major powers.

<http://saudigazette.com.sa/article/584221/World/Mena/Netanyahu-presses-Pompeo-for-more-pressure-on-tottering-Iran>

J. Turkey

Turkey veto clouds Nato party in London

Andrew Rettman and Andrius Balèiūnas, Eu Observer, December 3, 2019

Turkey's veto of a Nato defence plan is just normal pre-summit games, Lithuania has said, as Western leaders meet in the UK. "I don't believe they [Turkey] are blocking anything against the Baltic states. They have their own security concerns ... it's more about the interests of Turkey," Lithuanian foreign minister Linas Linkevičius told EUobserver from London on Monday (2 December).

"As usual, countries are trying to discuss [summit declarations], trying to get maybe something less, or something more," he said. "We'll find a solution," he added. "Frankly, I think military authorities already know what they need to do in preparation [on the ground], so they [Turkey] are not infringing on that ... but it is very important that these plans are kept updated," the Lithuanian minister also said.

<https://euobserver.com/foreign/146797>

Turkey Point licensed for 80 years of operation

World Nuclear News, December 6, 2019

The US Nuclear Regulatory Commission (NRC) has approved Florida Power & Light's (FPL) application for a 20-year subsequent licence extension for Turkey Point units 3 and 4, the first time the regulator has issued licences authorising reactors to operate for up to 80 years. The two pressurised water reactors, which are located about 20 miles south of Miami, have been in commercial operation since 1972 (unit 3) and 1973 (unit 4), when they were initially licensed to operate for up to 40 years. The NRC in 2002 issued renewed licences for a further 20 years of operation for each unit. FPL submitted a subsequent licence renewal application for a further 20 years of operation on 30 January 2018. The NRC notified FPL of the issuance of the subsequent renewed licences in a letter dated 4 December. Turkey Point 3's subsequent renewed licence expires on 19 July 2052, and unit 4's on 10 April 2053, the NRC said.

"The rationale for the NRC's decision is documented in the staff's July 2019 final Safety Evaluation Report on the application, as well as the staff's October 2019 final Supplemental Environmental Impact Statement. The NRC's Advisory Committee on Reactor Safeguards also reviewed the safety aspects of renewing the licences," the regulator said. The NRC is authorised under the US Atomic Energy Act to issue licences for commercial power reactors to operate for up to 40 years - a time period which it says was based on economic and antitrust considerations, rather than limitations of nuclear technology. Licences can be renewed for an additional 20 years for an operating lifetime of 60 years in a process that requires applicants to address the technical aspects of plant aging and describe how those effects will be managed, as well as evaluating potential environmental impacts of the plant's continued operation.

<https://www.world-nuclear-news.org/Articles/Turkey-Point-licensed-for-80-years-of-operation>

Turkey flexes muscle as Greece and EU stick to international law

John Psaropoulos Aljazeera, December 14, 2019

Relations between Greece and Turkey have been thrown into diplomatic crisis since November 28, when Turkey announced it had signed a memorandum of understanding with Libya outlining their maritime boundaries. The memorandum traces a corridor of water between the Turkish and Libyan coasts that cuts across what Greece views as its islands' maritime territory. At stake is national prestige - and the lucrative prospect of hydrocarbon resources. Greece and Turkey have not delimited their Exclusive Economic Zones, which allow countries to exploit undersea wealth.

Cyprus, Israel and Egypt, who have delineated their EEZs, have all discovered offshore gas fields that can power their economies for decades. Alarmed by Turkish statements that Ankara would send ships to look for oil and gas in its newly claimed dominions, Greece reinforced its military garrison on Crete, and told Turkey that its drillships would be sunk.

<https://www.aljazeera.com/news/2019/12/turkey-flexes-muscle-greece-eu-stick-international-law-191213175146069.html>

Turkey could close Incirlik air base in face of U.S. threats: Erdogan

Reuters, December 16, 2019

Turkey could shut down its Incirlik air base, which hosts U.S. nuclear warheads, in response to threats of U.S. sanctions and a separate U.S. Senate resolution that recognized mass killings of Armenians a century ago as genocide, President Tayyip Erdogan said on Sunday.

"If it is necessary for us to take such a step, of course we have the authority ... If this is necessary, together with our delegations, we will close down Incirlik if necessary," Erdogan said on A Haber TV. Turkey can also close down the Kurecik radar base if necessary, he added. "If they are threatening

us with the implementation of these sanctions, of course we will be retaliating," he said.

<https://www.reuters.com/article/us-turkey-usa-sanctions-incirlik/turkey-could-close-incirlik-air-base-in-face-of-u-s-threats-erdogan-idUSKBN1YJ0LL>

East Asia

K. Japan

METI eyes 2031 end to Fukushima No. 1 cleanup

Mari Yamaguchi

Japan Times, December 2, 2019

The industry ministry on Monday unveiled a revised plan to remove molten nuclear fuel debris from the meltdown-hit Fukushima No. 1 power plant in 2031 — a process said to be the biggest hurdle to decommissioning the six-reactor facility. Work to remove the debris should start with the No. 2 reactor, according to the mid- to long-term road map released by the government. Designating a specific time frame for the first time, the plan also calls for completing the removal of 4,741 fuel rods left inside the cooling pools for reactor Nos. 1 to 6 by 2031.

<https://www.japantimes.co.jp/news/2019/12/02/national/road-map-fukushima-nuclear-cleanup/#.XgB2ba8zbIU>

Arrangements in works for Iran's president to visit Japan this month

The Asahi Shimbun, December 4, 2019

Tokyo and Tehran are coordinating a possible visit to Japan this month by Iranian President Hassan Rouhani to discuss how to defuse tensions in the Middle East, sources from the two governments said. The possible trip was apparently raised in a meeting between Prime Minister Shinzo Abe and Iranian Deputy Foreign Minister Seyyed Abbas Araghchi in Tokyo on Dec. 3. If Rouhani does visit Japan, he would be the first Iranian president to do so since

Mohammad Khatami traveled to the Japanese capital in October 2000.

Abe in June became the first Japanese prime minister in 41 years to visit Iran. He met with Rouhani and Iranian supreme leader Ayatollah Ali Khamenei at a time when friction was rapidly increasing between Iran and the United States.

<http://www.asahi.com/ajw/articles/AJ201912040029.html>

U.S. signals approval for Tokyo visit by Iran's Rouhani amid nuclear impasse

Japan Times, December 9, 2019

The United States has shown approval toward Japan's plan to have Iranian President Hassan Rouhani visit the country, according to diplomatic sources, as Tehran is seeking to break a deadlock over a nuclear deal with world powers. Washington has also urged Tokyo to share the outcome of a summit between Prime Minister Shinzo Abe and Rouhani, the sources said. A senior U.S. official has relayed the message to Japan.

Japanese and Iranian officials are arranging for Rouhani to visit around Dec. 20, according to the sources. If realized, it will be the first visit to the country by an Iranian president since Mohammad Khatami in October 2000.

<https://www.japantimes.co.jp/news/2019/12/09/national/politics-diplomacy/u-s-oks-plan-iranian-president-visit-tokyo-tehran-seeks-break-impasse-nuclear-issue/#.XgBsd68zbIU>

Nuclear no-no: 17-year-old nabbed for uranium trade

The Asahi Shimbun, December 11, 2019

An interest in chemistry taken too far has landed a high school student in Tokyo in hot water with the police. The Metropolitan Police Department said Dec. 10 it sent to prosecutors a report on a 17-year-old boy, along with a temporary worker and another individual, on suspicion of trading uranium without permission from nuclear regulators. As the substance can be used to create

dangerous materials, uranium is kept under strict control by authorities, though it is difficult to stop illegal distribution.

The high school student, who lives in Koganei city, is believed to have bought depleted uranium online without proper documentation from the secretariat of the Nuclear Regulation Authority (NRA) in January 2018, according to police. He then transferred soluble uranium compound to four people in May and June of that year. He was quoted by investigators as saying that he bought uranium ore from a website overseas and refined it himself, adding, "I wanted to have it in my collection." The amounts of uranium, which were small and kept in containers, posed little health risk. Although the youth was deemed to have a genuine interest in chemistry, police also handed papers to prosecutors alleging he violated a law on hazardous substances.

<http://www.asahi.com/ajw/articles/AJ201912110069.html>

Nuclear watchdog OKs decommissioning plan for two reactors at Kepco's Oi plant in Fukui

Japan Times, December 11, 2019

The nation's nuclear watchdog approved a plan Wednesday to decommission two reactors in Fukui Prefecture, a move their operator decided to take rather than shoulder the high cost of implementing safety upgrades. Kansai Electric Power Co. will spend ¥118.7 billion to dismantle the Nos. 1 and 2 units at the Oi nuclear power plant, with work expected to wrap up in the fiscal year ending March 2049.

The units, which each have an output capacity of more than 1 million kilowatts, are the most powerful reactors to be approved for decommissioning by the Nuclear Regulation Authority since a magnitude 9.0 earthquake and subsequent tsunami caused a meltdown at the Fukushima No. 1 plant in March 2011.

<https://www.japantimes.co.jp/news/2019/12/11/>

national/nuclear-watchdog-oks-decommissioning-kepc-fukui/#.XgBslK8zbIU

Japan-Iran summit being finalized for Dec. 20 as Abe looks to play mediator

Japan Times, December 12, 2019

Japan and Iran are making final arrangements for their leaders to hold talks on Dec. 20, a source close to bilateral relations said Wednesday. Iranian President Hassan Rouhani is planning to arrive in Japan on the evening of Dec. 19 for a three-day visit after stopping in Malaysia, where he is expected to attend a conference, the source said. Prime Minister Shinzo Abe has said his government – through its own diplomatic initiative – wants to help ease tensions in the Middle East. He confirmed that Rouhani's visit was being arranged during a news conference in Tokyo on Monday but did not give a date.

Tehran is seen as seeking to break the impasse over a 2015 nuclear deal, as the reinstatement of U.S. sanctions following Washington's withdrawal from the accord has hurt Iran's economy. As Iran has moved away from the landmark deal in recent months, Abe is likely to urge Rouhani to keep to its commitments. The deal was intended to curb Tehran's nuclear program in exchange for the lifting of sanctions.

<https://www.japantimes.co.jp/news/2019/12/12/national/politics-diplomacy/japan-iran-summit-finalized-dec-20-abe-looks-play-mediator/#.XgBsjK8zbIU>

L. North Korea

Experts expect North Korea to ratchet up provocations

Takeshi Kamiya, The Asahi Shimbun, December 1, 2019

North Korea will likely increase its missile launches toward the end of December as the year-end deadline approaches for a new denuclearization proposal from the United States, according to defense experts here. Pyongyang test-fired two short-range

ballistic missiles from what it called a "super-large multiple rocket launcher" on Nov. 28. The projectiles landed in waters between North Korea and Japan. North Korea also test-fired missiles in October. According to South Korea's National Intelligence Service (NIS), North Korea's firing of a series of projectiles over the past months is intended to put pressure on the United States to break the deadlock in their denuclearization talks.

"The missile launches signal that Pyongyang is willing to return to provocations that it had used in the past if its demands were not met," the NIS said. "Toward the deadline, Pyongyang will continue its provocations in various forms." The launches are also designed to keep the North Korean military in check and prevent any possible defiance against the regime of Kim Jong Un, the NIS said. The NIS noted advances in North Korea's missile technology with the Nov. 28 test, citing the fact that the interval between the two launches was cut to only 30 seconds. North Korea is believed to have been developing four types of new missiles since May, according to defense experts.

<http://www.asahi.com/ajw/articles/AJ201912010028.html>

N. Korea steps up tensions with new missile launch platforms

Yoshihiro Makino, The Asahi Shimbun, December 2, 2019

North Korea is busy constructing dozens of concrete platforms for mobile missile launchers as it raises the ante in denuclearization talks with Washington, according to defense sources in the United States and South Korea. The sources said the work got under way this summer at dozens of sites. Japanese and South Korean authorities expressed concern about Pyongyang's latest attempt to heighten military tensions in the region to wrest concessions from Washington in stalemated denuclearization talks. Construction of the platforms apparently reflects fears that launchers could become

dysfunctional or missile trajectories veer off track due to the soft ground on which they are installed.

The program is also intended to prevent other countries from detecting where missiles will be launched. The platforms, each dozens of meters in width and length, are large enough for mobile launchers to fire intercontinental ballistic missiles, according to the sources. An analysis of satellite images of the sites and photos of previous missile launches released by Pyongyang suggest that some launch sites have become compromised and some mobile launch vehicles were damaged in past launches due to strong vibrations, according to an intelligence assessment by Japan, the United States and South Korea.

<http://www.asahi.com/ajw/articles/AJ201912020041.html>

NK-set expiration of nuclear talks approaching

Do Je-hae, Korea Times, December 4, 2019

Tension between U.S. President Donald Trump and North Korean leader Kim Jong-un is escalating ahead of the “year-end deadline” proposed by Kim for a breakthrough in the two countries’ denuclearization talks. With the deadline swiftly approaching, Washington and Pyongyang are urging each other to make concessions to resume bilateral negotiations. Trump, who has often boasted of his “great relations” with the North Korean leader, has mentioned the possibility of “use of force,” in an apparent threat to get Pyongyang to show more concrete actions toward dismantling its nuclear program.

Trump’s latest strong warning to Kim has triggered concerns about renewed tension between the two foes of the Korean War in the absence of a real breakthrough by the end of the year. The U.S. leader also used the term “rocket man,” which was used when bilateral relations were strained after North Korea fired an intercontinental ballistic missile (ICMB) in 2017. Trump refrained from using the derogatory term in 2018 after he launched summit diplomacy

with the North Korean leader. Analysts said that bringing back the term reflects Washington’s frustrations toward Pyongyang’s rigid position that there will be no progress in denuclearization steps without the easing of sanctions against the impoverished country. Kim has been stressing the need for independent measures to salvage its economy amid the prolonged economic isolation.

http://www.koreatimes.co.kr/www/nation/2019/12/113_279803.html

North Korea threatens to resume calling Trump ‘dotard’

Hyung-jin Kim, AP News, December 6, 2019

North Korea threatened Thursday to resume insults of U.S. President Donald Trump and consider him a “dotard” if he keeps using provocative language, such as referring to its leader as “rocket man.” Choe Son Hui, the first vice foreign minister, issued the warning via state media days after Trump spoke of possible military action toward the North and revived his “rocket man” nickname for North Korean ruler Kim Jong Un.

The comments came as prospects dim for a resumption of nuclear diplomacy between the two countries. In recent months, North Korea has hinted at lifting its moratorium on nuclear and long-range missile tests if the Trump administration fails to make substantial concessions in nuclear diplomacy before the end of the year. Choe said Trump’s remarks “prompted the waves of hatred of our people against the U.S.” because they showed “no courtesy when referring to the supreme leadership of dignity” of North Korea. She said North Korea will respond with its own harsh language if Trump again uses similar phrases and shows that he is intentionally provoking North Korea.

<https://apnews.com/c3f58108244e4c6097222ac372307598>

N. Korea says it carried out 'very important test' at satellite launch site

Korea Times, December 8, 2019

North Korea has conducted a "very important test" at its Sohae satellite launch site, state media reported Sunday, as nuclear negotiations between Pyongyang and Washington remain deadlocked. "A very important test was carried out at the Sohae Satellite Launch Site on December 7th, 2019," a spokesman for the North's National Academy of Science said. The result of the latest test will have an "important effect" on changing the "strategic status" of North Korea, the spokesman said in a statement carried by the KCNA news agency. The statement did not provide further details on the test. North Korean leader Kim Jong Un had agreed to shutter the Sohae site during a summit last year with South Korean President Moon Jae-in in Pyongyang as part of trust-building measures.

http://www.koreatimes.co.kr/www/nation/2019/12/103_279954.html

North Korea says denuclearization not on negotiating table

Edith M. Lederer, AP News, December 7, 2019

North Korea said Saturday that denuclearization has "already gone out of the negotiation table" and it does not need to have lengthy talks with the United States as the end-of-year deadline set by its leader Kim Jong Un for substantial U.S. concessions in nuclear diplomacy looms. A statement released by North Korea's U.N. ambassador, Kim Song, accused the Trump administration of persistently pursuing a "hostile policy" toward the country "in its attempt to stifle it." He also said Washington's claims it is engaged in a "sustained and substantial dialogue" with Pyongyang solely for "its domestic political agenda."

"We do not need to have lengthy talks with the U.S. now and the denuclearization is already gone out of the negotiation table," he said. Song's statement was a response to

Wednesday's condemnation by six European countries of North Korea's 13 ballistic missile launches since May. He accused the Europeans — France, Germany, Britain, Belgium, Poland and Estonia — of playing "the role of pet dog of the United States in recent months." He called their statement "yet another serious provocation" against North Korea's "righteous measures of strengthening national defense capabilities."

"We regard their behavior as nothing more than a despicable act of intentionally flattering the United States," Song said. His comments follow other recent North Korean statements indicating that prospects are dim for a resumption of nuclear diplomacy between the United States and North Korea. On Thursday, North Korea's first vice foreign minister, Choe Son Hui, issued a warning threatening to resume insults of U.S. President Donald Trump and consider him a "dotard" if he keeps using provocative language, such as referring to North Korea's leader as "rocket man." His statement via state media came days after Trump spoke of possible military action toward the North and revived his "rocket man" nickname for North Korean ruler Kim Jong Un.

<https://apnews.com/bdf3d4e46a823a3cc69776da962001f7>

North Korea says denuclearization 'gone out of negotiation table' with US

Korea Times, December 8, 2019

North Korea said Saturday that denuclearization has "already gone out of the negotiation table" and it does not need to have lengthy talks with the United States as the end-of-year deadline set by its leader Kim Jong Un for substantial U.S. concessions in nuclear diplomacy looms. A statement released by North Korea's U.N. ambassador, Kim Song, accused the Trump administration of persistently pursuing a "hostile policy" toward the country "in its attempt to stifle it." He also said Washington's claims it is engaged in

a “sustained and substantial dialogue” with Pyongyang solely for “its domestic political agenda.” “We do not need to have lengthy talks with the U.S. now and the denuclearization is already gone out of the negotiation table,” he said.

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http://www.koreatimes.co.kr/www/nation/2019/12/103_279955.html

N. Korea conducts ‘important test’ at once-dismantled site

Hyung-jin Kim, AP News, December 8, 2019

North Korea said Sunday that it carried out a “very important test” at its long-range rocket launch site that it reportedly rebuilt after having partially dismantled it at the start of denuclearization talks with the United States last year. The announcement comes amid dimming prospects for a resumption of negotiations, with the North threatening to seek “a new way” if it fails to get major U.S. concessions by year’s end. North Korea has said its resumption of nuclear and long-range missile tests depends on the United States.

Saturday’s test at the Sohae Satellite Launching Ground will have “an important effect on changing the strategic position of (North Korea) once again in the near future,” an unidentified spokesman from the North’s Academy of National Defense

Science said in a statement, carried by the country’s official Korean Central News Agency. North Korea didn’t say what the test included. Kim Dong-yub, an analyst at Seoul’s Institute for Far Eastern Studies, said that North Korea likely tested for the first time a solid-fuel engine for an intercontinental ballistic missile.

The use of solid fuel increases a weapon’s mobility and reduces the amount of launch preparation time. The long-range rockets that North Korea used in either ICBM launches or satellite liftoffs in recent years all used liquid propellants. CNN reported Friday that a new satellite image indicated North Korea may be preparing to resume testing engines used to power satellite launchers and intercontinental ballistic missiles at the site. Seoul’s Defense Ministry said in a brief statement later Sunday that South Korea and the United States are closely monitoring activities at the Sohae site and other key North Korean areas. President Donald Trump reacted to the development by saying that North Korea “must denuclearize.”

<https://apnews.com/771a2235054d115a526ee8dcc2bd6295>

N. Korea believed to test new rocket engine to provoke US

Hyung-jin Kim And Kim Tong-hyung, AP News, December 9, 2019

A day after North Korea said it had performed a “very important test” at its long-range rocket launch site, there is wide speculation that it involved a new engine for either a space launch vehicle or a long-range missile. Whatever it was, the North Korean announcement suggests that the country is preparing to do something to provoke the United States if Washington doesn’t back down and make concessions in deadlocked nuclear negotiations. A look at the North Korean test, which comes as a year-end deadline set by North Korea for the U.S. to salvage the nuclear talks is approaching.

<https://apnews.com/73b6635438481b6f9451dfea49699d>

N. Korea conducts 'another crucial test'

Korea Times, December 14, 2019

North Korea said Saturday it has successfully carried out "another crucial test" at its satellite launch site in a possible sign of further provocations unless its year-end deadline is met. North Korea has pressed the U.S. to come up with a new proposal by the year's end, warning that otherwise, it could give up on negotiations with the U.S. and take a "new way." North Korea did not elaborate on its seven-minute test on Friday night at the Sohae Satellite Launching Ground, better known as the Dongchang-ri site on the west coast.

The test came six days after North Korea conducted what it called a "very important test" at Dongchang-ri. South Korea has confirmed that the North tested a rocket engine last week. "The research successes being registered by us in defense science one after another recently will be applied to further bolstering up the reliable strategic nuclear deterrent of the Democratic People's Republic of Korea," the North's official Korean Central News Agency said, referring to the North by its official name. North Korea has increased pressure on the U.S. to come up with a new proposal in their stalled nuclear talks, strongly suggesting that it could restart testing nuclear weapons and intercontinental ballistic missiles (ICBMs) if none is forthcoming.

The North has recently said that it is entirely up to Washington what "Christmas gift" it wants to get. An ICBM launch or a nuclear test would represent a blow to U.S. President Donald Trump ahead of next year's presidential election as he has boasted of the North's suspension of such weapons tests as one of his key diplomatic achievements. Trump has warned North Korean leader Kim Jong-un not to interfere with his re-election bid, saying the communist nation could lose "everything." The North said in response that the country has nothing more to lose.

http://www.koreatimes.co.kr/www/nation/2019/12/103_280311.html

Chief of KPA General Staff urges US to watch its mouth

Pyongyang Times, December 16, 2019

"I am very glad that the DPRK Academy of Defence Sciences is attaining great successes in building up defence capabilities of the country as it successfully carries out a series of tests of great significance," Pak Jong Chon, chief of the General Staff of the Korean People's Army, said last Saturday. He said that the priceless data, experience and new technologies gained through the recent tests will be applied to another strategic weapon programme of the DPRK aimed at restraining and overpowering the US' nuclear threat in a definite and reliable manner.

Only when the balance of power is fully ensured, can genuine peace be safeguarded and our development and future be guaranteed, he added. "We have stored up tremendous force. "We should be ready to cope with both political and military provocations by hostile forces and be familiar with both dialogue and confrontation." The KPA, he noted, is fully poised to carry through any decision of the Supreme Leader with action. Everyone is free to evaluate the entity of our force, he said, but he or she needs to see it squarely before judgment. Given the acute situation, he advised the US and other hostile forces to refrain from provoking the DPRK in order to spend the year-end in peace.

<http://www.pyongyangtimes.com.kp/?bbs=32453>

M. South Korea

Holding nuke talks this month will affect N. Korea's policymaking for next year: Minister

Park Han-na, Korea Times, December 2, 2019

Unification Minister Kim Yeon-chul on Monday urged the US and North Korea to hold a working-level meeting before the

end of the month, as such a meeting could have far-reaching influence on Pyongyang's strategic direction for next year. How North Korea will spend this month will be reflected in regime leader Kim Jong-un's 2020 New Year's address, a key indicator of the North's policies. Once a new strategic direction is set by the ruler, it cannot be altered by lower-level officials, given the North's inflexible structural characteristics.

"It is very important that the North Korea's nuclear issue enters into the process of resolution through working-level negotiation in December," said Kim at a forum hosted by the Kwanshoon Club, a group of senior journalists. Talks between Washington and Pyongyang have been stalled for two months with the year-end deadline set by the North for the US to take a flexible approach toward denuclearization of the Korean Peninsula drawing near. In mid-November, US Special Representative for North Korea Stephen Biegun called the deadline artificial. "Unfortunately it's a deadline that they've set upon themselves," he said.

http://www.koreaherald.com/view.php?ud=20191202000771&ACE_SEARCH=1

Moon calls for Chinese role in denuclearizing North Korea

Kim Tong-hyung, AP News, December 5, 2019

South Korean President Moon Jae-in said Thursday the global diplomatic push to defuse the nuclear standoff with North Korea is at a "critical crossroads" and called for China to continue serving a "positive role" in denuclearizing the Korean Peninsula and stabilizing peace. Moon made the comments during a meeting with Chinese Foreign Minister Wang Yi at Seoul's presidential Blue House. Wang made his first visit in four years amid efforts to patch up relations damaged by South Korea's deployment of a U.S. anti-missile system China perceives as a security threat.

"The process for the complete denuclearizing of the Korean Peninsula and

permanently stabilizing peace is at a critical crossroads," Moon said. "I would like to ask for continuous support from the Chinese government until the new era of a peaceful and denuclearized Korean Peninsula opens."

<https://apnews.com/d1c408088d5b459593d042f504e28179>

S. Korea to promote exports of its designed nuke reactors

Yonhap, Korea Herald, December 6, 2019

South Korea will seek to export more its endogenously designed nuclear reactors, the country's state-run nuclear plant operator said Friday, as it has successfully completed the construction of two new nuclear reactors in the southern port city of Ulsan. The Korea Hydro & Nuclear Power Co. held a ceremony to mark the completion of the reactors, called Shin Kori-3 and Shin Kori-4. The Shin Kori-4 started commercial operation in August, after completing its two-month pilot run without any glitch. The Shin Kori-3 was put into operation in December 2016. "South Korea's nuclear energy industry advanced to another level through the completion of two reactors," KHNP President Chung Jae-hoon said at the ceremony.

The construction of the two Korean-designed APR-1400 pressurized water reactors started in 2007. The budget allocated to build the two reactors was 7.5 trillion won (\$6.3 billion), according to the KHNP. The APR-1400 is an advanced pressurized water nuclear reactor designed by the Korea Electric Power Corp., the country's sole electricity provider. South Korea has been pushing to sell the APR-1400 model to other countries by winning certificates from European and US organizations, after selling four units of the reactors to the United Arab Emirates.

http://www.koreaherald.com/view.php?ud=20191206000536&ACE_SEARCH=1

Moon, Trump agree on need to maintain dialogue momentum over N. Korea

Yonhap, Korea Herald, December 7, 2019

South Korean President Moon Jae-in and US President Donald Trump agreed Saturday that it's necessary to maintain dialogue momentum between Washington and Pyongyang, Cheong Wa Dae said, amid growing worries about the future of the Korea peace process. During half-hour phone talks, they also agreed that the recent situations on the Korean Peninsula are "severe" and "dialogue momentum should be maintained to achieve prompt results from denuclearization negotiations," according to Cheong Wa Dae spokesperson Ko Min-jung.

Moon and Trump had "in-depth consultations" on ways to move forward the peace process and agreed to have a phone conversation whenever it's needed, Ko added. Earlier this week, North Korea resumed its verbal attacks against Trump in response to his apparent warning message made during his trip to Britain for a NATO summit.

http://www.koreaherald.com/view.php?ud=20191207000034&ACE_SEARCH=1

South Korea's Moon to visit China for trilateral with Japan amid North Korea tension

Hyonhee Shin, Reuters, December 10, 2019

South Korean President Moon Jae-in will visit China next week for a trilateral summit with Japan amid rising tension over stalled denuclearization talks between North Korea and the United States, Moon's office said on Tuesday. Moon is scheduled to arrive in China on Dec. 23, one day before the planned trilateral meeting in the southwestern city of Chengdu with Chinese Premier Li Keqiang and Japanese Prime Minister Shinzo Abe, his spokeswoman Ko Min-jung told a briefing.

The leaders would review the recent situation on the peninsula and discuss ways to boost three-way cooperation to achieve

denuclearization and permanent peace, Ko said. Moon is also expected to hold separate talks with Abe and also Chinese President Xi Jinping during that trip.

<https://www.reuters.com/article/us-southkorea-china/south-koreas-moon-to-visit-china-for-trilateral-with-japan-amid-north-korea-tension-idUSKBN1YE0SX>

South Korea says North's recent test was of rocket engine

Hyung-jin Kim, AP News, December 10, 2019

South Korea's defense minister said Tuesday that North Korea's recent unspecified test at a rocket liftoff site was of a rocket engine, amid speculation the North was making preliminary steps toward a prohibited long-range rocket launch. Defense Minister Jeong Kyeong-doo said during a visit to Sydney that Seoul expressed its "deep concerns" over the engine test and North Korea's recent ballistic missile launches into the sea, according to his office in Seoul.

It was the first official outside assessment of what North Korea called "a very important test" at its Tongchang-ri rocket launch site. The North's Academy of National Defense Science said Sunday the test will have "an important effect on changing the strategic position" of North Korea.

<https://apnews.com/6687004b15af8efacc881da94445816a>

N. Op-Ed

India

Story of father of Indian space programme in photos

The Hindu, December 4, 2019

The story of the Indian space programme is closely entwined with the story of Vikram Ambalal Sarabhai. A slim commemorative volume published by the Indian Space Research Organisation (ISRO) offers, through a clutch of black-and-white photographs, valuable glimpses

into the life and times of the remarkable man and the evolution of the ISRO. Dr. Vikram A. Sarabhai (1919-1971) has been published to mark the 100th birth anniversary of Sarabhai, the father of the Indian space programme.

It tells us that “on 12th August, 1919, Vikram was born with (a) large head and big ears,” and that Rabindranath Tagore who “intently looked at the physiognomy and expression and shape of the head quietly remarked to the parents that he would become a celebrity”.

<https://www.thehindu.com/news/national/kerala/story-of-father-of-indian-space-programme-in-photos/article30170443.ece>

Policy Paralysis Cannot Be India's Response to the US-Iran Impasse

Vaishali Basu Sharma, The Wire, December 5, 2019

Observing the entire imbroglio play out in the Middle East, one gets the impression of a replay of events in Iraq or Libya, followed by a sensation of dread. Just like the bogey of WMDs, the accusation against Iran, led by the US for attacks on Saudi Arabia's Abqaiq oil refinery and Khurais oil fields, appears to be based more on prejudice and less on evidence.

Veritably the spark for the current crisis was provided by the attack on the Saudi Arabian oil company, Aramco, the tinderbox is the enduring animosity between the US and Iran. Relations between the US and Iran have ranged from limited to non-existent over the past 40 years. However, the strategy to connect Iran with Al Qaeda and justifying the application of presidential authorization for use of military force has not had buyers within the US. Parenthetically with past American behaviour in the region as a precedent, comments from a fabricating President Trump are already casting doubts on allegations of Iran's involvement in the attack.

<https://thewire.in/external-affairs/india-iran-us-sanctions>

India is in the second space age with one hand tied at the back

Nitin Pai, Livemint, December 8, 2019

Last week, Lloyd's of London launched a \$25 million insurance facility for the private space industry. It will cover sub-300kg satellites from pre-launch to in-orbit operations. The insurer estimates the current private space market to be worth \$300 billion and expects it to grow to \$1 trillion by 2040. Neither Lloyd's nor the City of London are strangers to underwriting exploration. Along with their Dutch and later American counterparts, over the past few centuries they helped shape the history and political geography of the modern world.

One important lesson from the story of exploration, colonial expansion and empire is that even small legal innovations can have profound consequences. The invention of the joint stock company and the ecosystem that arose to support it allowed the Dutch and British East India companies to take massive risks and reap unprecedented rewards for their shareholders and sovereigns. A similar business environment on the American continent helped the US grow into what it is today. The moral cost of colonialism is unconscionable. The inescapable point, though, is that societies that create conditions that allow private entrepreneurs to take big risks often end up as successful, prosperous ones. That is a lesson from history that is relevant to the space business today.

Luxembourg has followed the US in enacting a law that allows private investors to own the resources they bring back from space. Singapore is offering itself as a hub for space entrepreneurship based on its legal environment, availability of skilled manpower and equatorial location. New Zealand is positioning itself as a location for private rocket launches. China, too, has changed its rules to allow private commercial space activity. In July, Beijing Interstellar Glory Space

Technology Ltd became the first private company (with Chinese characteristics, of course) to launch two satellites into space using its own Hyperbola-1 rocket from a facility in the Gobi desert.

<https://www.livemint.com/opinion/columns/india-is-in-the-second-space-age-with-one-hand-tied-at-the-back-11575814985255.html>

ISRO Needs to Reflect on How It Can Encourage, Not Dismiss, Those Who Can Help

Arup Dasgupta The Wire, December 8, 2019

Chandrayaan 2 was India's third attempt to operate a satellite outside of Earth's orbit. The first two attempts of similar feats, Chandrayaan 1 and the Mars Orbiter Mission (MOM), were both significantly successful. In fact, MOM advertised ISRO's and India's prowess in space exploration beyond the organisation's highest expectations. It reached Mars and got into orbit around it with textbook precision. It continues to go strong to this day. So ISRO, brimming with confidence, decided to go public with Chandrayaan 2 with a vengeance - and rightly so. It was time that the country and indeed the world shared in yet another spectacle put on by ISRO.

The GSLV Mk III turned 'Bad Boy' turned 'Bahubali' launched the Chandrayaan 2 mission on July 22 (in a performance that exceeded expectations). After a series of intricate manoeuvres in orbits around Earth and the Moon, the Chandrayaan 2 satellite stack, consisting of an orbiter and the lander, Vikram, completed its initial manoeuvres, and then it was finally time for the big event. Vikram separated from the orbiter and began a controlled descent towards the Moon's surface, preparing to soft-land on lunar soil. Vikram carried a rover named Pragyan in its belly plus a payload of six instruments.

<https://thewire.in/space/isro-k-sivan-shanmuga-subramanian-vikram-lander-chandrayaan-2-ohrc-lroc>

Why India's Arihant-Class Missile Submarine Is a Serious Problem for China

Kyle Mizokami, National Interest Blog, December 12, 2019

New Delhi's submarines can fire powerful nuclear missiles. A new submarine promises to give the world's most populous democratic nation a powerful second-strike nuclear capability. The INS *Arihant*, India's first nuclear ballistic-missile submarine, will finally give the country nuclear weapons that could survive a surprise first strike and go on to deal a crushing retaliatory blow to the enemy. The new sub will complete India's triad of air, land and sea nuclear forces.

India tested its first weapon, an eight-kiloton device nicknamed Smiling Buddha, in 1974. Although small in yield, the device was a remarkable technological achievement that thrust the young country into the exclusive, so-called "nuclear club" that had until then consisted of the United States, Soviet Union, United Kingdom, France and China.

<https://nationalinterest.org/blog/buzz/why-indias-arihant-class-missile-submarine-serious-problem-china-104232>

Twenty Years Ago, Nuclear-Armed India and Pakistan Fought a Chilly, High-Altitude War in the Himalayas

Sebastien Roblin, National Interest Blog, December 14, 2019

For years, there was a conceit that no two states with nuclear weapons have ever directly fought each other. That conceit has at times been thin. For example, during the Korean War, Soviet air force regiments battled U.S. jet fighters in support of North Korea. But Washington as much as Moscow refrained from pointing out that thinly-veiled fact, lest it escalate tensions.

But when thousands of Pakistani troops infiltrated across the Line of Control in 1999, separating the Indian and Pakistani-controlled territories, disguised as local insurgents, the pretense proved impossible to maintain before the prying eyes of global media.

Just a year earlier on May 28, 1998, Pakistan conducted a series of underground nuclear tests known as Chagai-I. Islamabad's ascension as a nuclear power was met with jubilation in Pakistani streets and condemnations and sanctions across the globe. Though Pakistan's rival India had conducted its Smiling Buddha nuclear test in 1974, Chagai came in response to a second India test held just two weeks later.

<https://nationalinterest.org/blog/buzz/twenty-years-ago-nuclear-armed-india-and-pakistan-fought-chilly-high-altitude-war>

This Means Drama: Indian Missile Defense Is Raising Tensions With Pakistan

Michael Peck, National Interest Blog, December 15, 2019

India has a long way to go until its defenses are ready, but Pakistan will not wait. India says it has successfully tested an interceptor capable of shooting down ballistic missiles. But could this trigger a nuclear war with Pakistan?

On August 2, the Defense Research Development Organization (DRDO) – India's equivalent of the Pentagon's DARPA research agency – launched an Advanced Area Defense (AAD) missile from Abdul Kalam island off India's eastern coast. "The endo-atmospheric missile, capable of intercepting incoming targets at an altitude of 15 to 25 kilometers [9 to 16 miles] was launched against multiple simulated targets of 1,500 kilometer [932 mile]-class ballistic missiles," according to the DRDO announcement.

<https://nationalinterest.org/blog/buzz/means-drama-indian-missile-defense-raising-tensions-pakistan-104992>

China

Why Does China Say It Won't Use Nuclear Weapons First in War?

David Axe, National Interest, December 10, 2019

China has reaffirmed its policy of never being the first in a conflict to use nuclear weapons. Experts refer to this policy as "no first use," or NFU. The NFU policy reaffirmation, contained in Beijing's July 2019 strategic white paper, surprised some observers who expected a more expansive and aggressive nuclear posture from the rising power.

Notably, the United States does not have a no-first-use policy. "Retaining a degree of ambiguity and refraining from a no first use policy creates uncertainty in the mind of potential adversaries and reinforces deterrence of aggression by ensuring adversaries cannot predict what specific actions will lead to a U.S. nuclear response," the Pentagon stated. Chinese state media posted the government's white paper in its entirety. "Nuclear capability is the strategic cornerstone to safeguarding national sovereignty and security," the paper asserts. "This is standard language," explained David Santoro, a nuclear expert with the nonprofit Pacific Forum. "China's nukes serve to prevent nuclear coercion and deter nuclear attack." Then the surprise. "China is always committed to a nuclear policy of no first use of nuclear weapons at any time and under any circumstances, and not using or threatening to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones unconditionally," the white paper adds.

<https://nationalinterest.org/blog/buzz/why-does-china-say-it-wont-use-nuclear-weapons-first-war-103542>

Here's China's Plan To Fight A Nuclear War Against America: Nuke U.S. Cities Millions would die.

Lyle J. Goldstein, National Interest, December 10, 2019

When one reads enough Chinese naval literature, diagrams of multi-axial cruise missile saturation attacks against aircraft carrier groups may begin to seem normal. However, one particular graphic from the October 2015 issue (p. 32) of the naval journal *Naval & Merchant Ships* stands out as both unusual and singularly disturbing. It purports to map the impact of a Chinese intercontinental ballistic missile (ICBM) strike by twenty nuclear-armed rockets against the United States. Targets include the biggest cities on the East and West Coasts, as well as in the Midwest, as one would expect. Giant radiation plumes cover much of the country and the estimate in the caption holds that the strike "would yield perhaps 50 million people killed". The map below that graphic on the same page illustrates the optimal aim point for a hit on New York City with a "blast wave that vaporizes all of Manhattan and well beyond.

That makes the North Korean "threat" look fairly insignificant by comparison, doesn't it? But what's really disturbing is that the scenario described above envisions a strike by China's largely antiquated DF-5 first generation ICBM. In other words, the illustration is perhaps a decade or more out of date. As China has deployed first the road-mobile DF-31, then DF-31A and now JL-2 (a submarine-launched nuclear weapon), China's nuclear strategy has moved from "assured retaliation" to what one may term "completely assured retaliation." Indeed, the actual theme of the article featuring those graphics concerns recent reports regarding testing of the DF-41 mobile ICBM.

<https://nationalinterest.org/blog/buzz/heres-chinas-plan-fight-nuclear-war-against-america-nuke-us-cities-103422>

Why China's next Long March 5 rocket mission will be about restoring national pride

Stephen Chen, South China Morning Post, December 14, 2019

A Long March 5 rocket is expected to blast off from a site in southern China this month carrying not only a next-generation communications satellite, but the hope that the mission will restore pride in the programme after a series of setbacks. One of the sources who confirmed the plan said that the atmosphere at Wenchang Space Launch Centre on the northern tip of Hainan Island was "so tense there seems to be a shortage of oxygen". The Long March 5 - also known as the CZ-5 - is the largest launch vehicle in China's space fleet. It can carry 25 tonnes into low Earth orbit, typically 645-1,610km (400-1,000 miles) from the surface. Engineers designed the CZ-5 to carry up to 32 tonnes, but it has not been tested with such a payload. If it could lift off with 32 tonnes, the CZ-5 would carry more than the US' Delta IV Heavy, Russia's Proton, and Europe's Ariane 5. But the CZ-5 is also the least reliable, as earlier missions showed.

On its maiden mission in November 2016, the rocket failed to reach the speed required for the early phase of the flight; still, extra booster fuel burned in the final stage lifted its satellite cargo into orbit and allowed China to declare the trip a success. In the second flight a few months later, though, the main engine died minutes after take-off, and the rocket plunged into the sea. In comparison, the Delta IV Heavy - first launched in 2002 - has made nine successful flights and one partial failure.

<https://www.scmp.com/news/china/science/article/3041408/why-chinas-next-long-march-5-rocket-mission-will-be-about>

Pentagon head says China has become top US military priority, moving past Russia

Lee Jeong-ho, South China Morning Post, December 14, 2019

Even as US and Chinese officials were reducing global economic tensions on Friday by confirming they had reached a “phase one” trade deal, the top US military official said that the Pentagon has put China on the top of its priorities – ahead of Russia – owing to Beijing’s “brazen efforts” to undermine the territorial claims of its neighbours. Speaking at the Council on Foreign Relations in New York, US Defence Secretary Mark Esper condemned China for undermining international laws and violating the sovereignty of smaller states. “Today, the international rules-based order that America and its allies have worked hard to establish is being tested ... China first and Russia second are now the department’s top priorities,” Esper said.

“Both nations are rapidly modernising their armed forces and expanding their capabilities into the space and cyber domains, emboldened by the growing strength of their militaries. Beijing and Moscow are not only violating the sovereignty of smaller states, they are also attempting to undermine international laws and norms that advantage themselves,” Esper said. In 2017, laying out ambitious plans for the People’s Liberation Army, Chinese President Xi Jinping said that the PLA must modernise by 2035 and become a top-ranked military by 2050. Beijing has also invoked its “nine-dash line” claim to what it says are its historic rights in the South China Sea, and has built artificial islands, reclaimed land and installed airstrips and military equipment in the waters. It is involved in acrimonious disputes with several Southeast Asian nations, including the Philippines and Vietnam, over the territory.

<https://www.scmp.com/news/china/military/article/3042083/pentagon-head-says-china-has-become-top-us-military-priority>

Pakistan

Is Nuclear Non-Proliferation still a realistic goal?

Nusrat Ali, Daily Times, December 3, 2019

Recently, the Moscow Nonproliferation Conference (MNC) was held in Russia where delegates from around 40 countries met to discuss the rising threat of using nuclear weapons in the potential interstate conflicts. Currently, there are around 14,500 active nuclear weapons round the world, according to the UN, in the hands of nine countries. Five of them are de jure nuclear states and signatories of the nuclear non-proliferation treaty (NPT). They are the US, UK, China, Russia and France. While the other four, India, Pakistan, Israel and North Korea, are de facto nuclear states and not the members of the NPT.

Besides, the US-North Korea nuclear talks have also stalled. Since the stalemate North Korea has continued its trajectory of testing new missiles; the latest being its super large multiple launch rocket system. Apart from that, the US unilateral withdrawal from the 2015 Iran nuclear deal and subsequently imposing severe crippling sanctions have hurt the Iranian economy adversely. With no strong measure to back the 2015 Iran nuclear deal by the rest of the members, Iran is also sliding towards a point where it could renew enriching its uranium. Not to forget that India and Pakistan have come neck to neck threatening the other with nuclear weapons over Kashmir’s problem.

<https://dailytimes.com.pk/512414/is-nuclear-non-proliferation-still-a-realistic-goal/>

Pakistan’s case stronger than India’s for elite N-club membership: ex-envoy

Dawn, December 6, 2019

Pakistan can consider accepting additional non-proliferation obligations, which are demanded by Western countries, only if there is an appropriate quid pro quo, said former senior diplomat Zamir Akram.

Mr Akram, who has served as Pakistan's ambassador to the United Nations in Geneva and Conference on Disarmament, was speaking at a conference on 'Peaceful Uses of Nuclear Technology – Pakistan's Achievements', which had been organised by the Strategic Vision Institute (SVI). Talking about the discriminatory attitude of the West towards Pakistan on giving it access to civil nuclear cooperation, he said that while India has been enjoying exceptionalism in the shape of Nuclear Supplier Group's waiver, Pakistan's quest for the membership of the elite nuclear club is opposed.

<https://www.dawn.com/news/1520711/pakistans-case-stronger-than-indias-for-elite-n-club-membership-ex-embassy>

USA

Donald Trump's Greatest National Security Threat: A China-Russia Alliance

Paul Dibb, National Interest Blog, December 1, 2019

We are in an era when the risks of major-power conflict are growing. The most likely contenders are commonly seen to be China, the rising power, and the US, the formerly dominant power that's now in relative decline. The other worrying contingency is conflict between Russia and US-led NATO.

But what about the third possibility: the prospect of China and Russia collaborating to challenge American power? Zbigniew Brzezinski warned that the most dangerous scenario for America would be a grand coalition of China and Russia united not by ideology, but by complementary grievances.

My new ASPI special report, released today, examines Russian and Chinese concepts of great-power war in the 21st century, their views of the West and its military capabilities, and the risks they might take to regain what they see as their lost territories in places such as Taiwan and Ukraine. It also looks at how America might react, the

implications of all this for the West, including Australia, and what sort of armed conflict might be involved.

<https://nationalinterest.org/blog/buzz/donald-trumps-greatest-national-security-threat-china-russia-alliance-100977>

The New Cold War? It's With China, and It Has Already Begun

Niall Ferguson, New York Times, December 2, 2019

When did Cold War II begin? Future historians will say it was in 2019. Some will insist that a new Cold War had already begun – with Russia – in 2014, when Moscow sent its troops into Ukraine. But the deterioration of Russian-American relations pales in comparison to the rise in Sino-American antagonism that has unfolded over the past couple of years. And though the United States and China can probably avoid a hot war, a second Cold War is still a daunting prospect.

Older readers will probably regard another Cold War as a bad idea. Their memories of the original might include near-Armageddon experiences, such as the 1962 Cuban missile crisis, and multiple conventional wars fought in countries from Vietnam to El Salvador. But there is no obvious reason Cold War II should feature nuclear brinkmanship or proxy wars.

For one thing, China is so inferior to the United States in nuclear weaponry that any confrontation is much more likely to occur in cyberspace, or in space itself, than with intercontinental ballistic missiles. The People's Republic does not have the same approach to global expansionism as the Soviet Union either. Chinese money goes into infrastructure projects and politicians' pockets, not foreign guerrilla movements. The "One Belt, One Road" initiative – Chinese President Xi Jinping's signature overseas investment program – does not aim for world revolution.

<https://www.nytimes.com/2019/12/02/opinion/china-cold-war.html>

Europe

Emerging Europe's nuclear option

Claudia Patricolo, Emerging Europe, December 3, 2019

No matter how many emission targets we put on ourselves, the quantity of carbon dioxide in the atmosphere keeps growing. According to the European Project for Ice Coring in Antarctica (EPICA), the global average of atmospheric carbon dioxide in 2018 was 407.4 parts per million, a level higher than at any point in at least the past 800,000 years. While some governments are looking at natural gas as a potential bridge to a sustainable future, many emerging European countries are instead focusing on nuclear to both reach the emission targets and diversify their energy supplies. Of the 449 nuclear power plants worldwide, 41 are located in Central and Eastern Europe. Ukraine tops the list with 15 operational reactors and two more under construction.

"The need for the reliable, predictable and clean electricity generated by nuclear has never been greater and, worldwide, that is reflected in the growing number of new build programmes underway," says Agneta Rising, director general of the World Nuclear Association. "However, a number of factors – both internal and external – are creating profound challenges for nuclear power in some of its most mature markets." Slovakia is the country that relies the most on nuclear: it provides 55 per cent of the country's total electricity. It is followed by Hungary (50 per cent), Ukraine (49 per cent) and Slovenia (37 per cent).

"Nuclear energy is inevitable in the Hungarian energy mix," explains Attila Aszodi, professor at the Budapest University of Technology and Economics. "Paks nuclear power plant is not only a carbon-free source of electricity but also the largest power plant in the country. And this provides baseload power."

<https://emerging-europe.com/intelligence/the-nuclear-option/>

Is Germany blocking nuclear because of gas?

Financial Times, December 4, 2019

Europe's taxonomy for sustainable activities is meant to make sustainable investment easier, providing the financing sector with an easy go-to place for defining activities that both significantly aid us with environmental goals, such as mitigating climate change, and which do no significant harm to other sustainability criteria. It was commissioned by the European Commission in July 2018 when it established a Technical Expert Group (TEG) to aid Europe's decarbonisation transition. The group's first report on sustainable activities came out just a year later on June 18, 2019 and featured a mixed analysis of nuclear. While the report said nuclear does have the climate credentials, it also stressed the need for empirical evidence on its sustainability over the fuel cycle – namely with regard to the storage of nuclear waste.

<https://ftalphaville.ft.com/2019/12/02/1575325247000/Is-Germany-blocking-nuclear-because-of-gas-/>

Russia

Russia Is Not The Soviet Union. So Why Can't Europe Help Pay More for NATO?

Daniel L. Davis, National Interest Blog, December 3, 2019

French President Macron claims NATO is "brain dead." Turkey's President Erdogan threatened to flood Europe with a wave of refugees if Europe opposed the Turkish incursion into Syria. And Trump has announced he is going to curtail U.S. support to NATO headquarters. On NATO's 70th anniversary, the alliance seems to be growing weaker and its future called into increasing doubt. The question for American policymakers: is that necessarily a bad thing?

Without question, the North Atlantic Treaty Organization was one of the 20th Century's greatest success stories and largely responsible for securing the peace for Western Europe following World War II. In the late 1940s Stalin's Soviet Union posed an existential threat to the war-weary democracies of Western Europe.

At the time, Soviet military power could have overwhelmed the combined efforts of France, West Germany, and the UK, and thus put American security at risk. The USSR no longer exists, however, and it is time to admit that Cold War structures are jarringly out of place in a post-Cold War.

<https://nationalinterest.org/blog/skeptics/russia-not-soviet-union-so-why-cant-europe-help-pay-more-nato-101507>

The Story of the 4 Nuclear Torpedoes Russia Left Behind

Robert Farley National Interest Blog, December 4, 2019

The sinking of the K-8 submarine taught the Russians important lessons about safety and handling emergencies. The Bay of Biscay is one of the world's great submarine graveyards. In late World War II, British and American aircraft sank nearly seventy German U-boats in the Bay, which joined a handful of Allied and German subs sunk in the region during World War I. On April 12, 1970, a Soviet submarine found the same resting place. Unlike the others, however, K-8 was propelled by two nuclear reactors, and carried four torpedoes tipped by nuclear warheads.

The November (Type 627) class was the Soviet Union's first effort at developing nuclear attack submarines. The 627s were rough contemporaries of the Skate and Skipjack class attack boats of the U.S. Navy (USN), although they were somewhat larger and generally less well-arranged. Displacing 4750 tons submerged, the thirteen 627s could make thirty knots and carry twenty torpedoes (launched from eight forward tubes). Visually, the 627s resembled a larger version of the Foxtrot class diesel-electric subs; the Soviets would not adopt a teardrop

hull until the later Victor class. The Novembers were renowned in the submarine community for their noise; louder than any contemporary nuclear sub, and even preceding diesel-electric designs.

The Novembers were initially designed with a strategic purpose in mind. The Soviets worked on a long-range nuclear armed torpedo (dubbed T-15), which could strike NATO naval bases from ranges of up to 40km. The torpedo was so large that each submarine could only carry a single weapon. However, increasingly effective Western anti-submarine technology quickly scotched the first mission. The Novembers were too loud to plausibly find their way into close enough proximity to a NATO port to ever actually fire a nuclear torpedo in wartime conditions.

<https://nationalinterest.org/blog/buzz/story-4-nuclear-torpedoes-russia-left-behind-102012>

Say What? Why Russia Keeps Practicing Nuclear War

Mark B. Schneider, National Interest Blog, December 6, 2019

In October 2019, Russia engaged in what was apparently its largest announced strategic nuclear strike exercise in its history, Thunder (Grom)-2019. The exercise had many of the usual features of Russian large strategic nuclear exercises: personal involvement by the President of Russia Vladimir Putin in authorizing simulated nuclear strikes; a reported escalation scenario with Russian first use of nuclear weapons; large numbers of live nuclear missile launches; and a reported ending of a massive Russian nuclear strike.[1] As usual, Russian strategic air defenses also played a role in Thunder-2019

The Russian Defense Ministry said that "The exercise was designed to test "the deployment and use of strategic forces against a threat of aggression." (Emphasis added). This is probably the most candid description of the content of a nuclear exercise since the Zapad-1999 exercise in which Russia, for the first time, announced nuclear first use. The literal meaning of the

statement “the deployment and use of strategic forces against a threat of aggression” is strategic nuclear preemption. Nuclear weapons’ use in an exercise against the “threat of aggression” is not deterrence or retaliation but pre-emptive first use. Russian Defense Minister General of the Army Sergei Shoigu stated that the exercise employed high-precision nuclear weapons. These were probably low-yield since few targets require high-precision, high-yield nuclear weapons.

<https://nationalinterest.org/blog/buzz/say-what-why-russia-keeps-practicing-nuclear-war-102722>

The Russian Navy Has Some Problems

David Axe, National Interest Blog, December 9, 2019

The Russia fleet in 2019 will take delivery of 23 new surface vessels, two new submarines and three new aircraft, Russian president Vladimir Putin announced. The numbers on their face are impressive. But in fact, most of the surface ships are small warships and support vessels. As such, 2019 continues the Russian fleet’s long-term trend toward fewer and smaller ships. “We have paid and will pay the closest attention to the technical re-equipment of the armed forces, including, of course, the modernization of the Russian navy,” Putin said at a Dec. 3, 2019 meeting of top military and industry officials.

“As part of the state defense order this year, the navy will receive more than 480 basic types of weapons and equipment,” Putin added. “Among them, two submarines, 23 surface ships and support vessels, three aircraft, four coastal missile systems and more than 400 units of various missile and torpedo weapons.” Putin highlighted the submarine acquisition. The Russian fleet is building new ballistic-missile and attack submarines as part of a broader effort to maintain a force of around 50 subs.

<https://nationalinterest.org/blog/buzz/russian-navy-has-some-problems-103217>

Russia Could Kill American Carriers Without the “Poseidon” Nuclear Torpedo

Michael Peck, National Interest Blog, December 12, 2019

Moscow likes scary weapons, even though they might not be practically usable. Russia has begun underwater tests of its Poseidon thermonuclear torpedo. The Poseidon is an 80-foot-long nuclear-powered submersible robot that is essentially an underwater ICBM. It is designed to travel autonomously across thousands of miles, detonate outside an enemy coastal city, and destroy it by generating a tsunami.

“In the sea area protected from a potential enemy’s reconnaissance means, the underwater trials of the nuclear propulsion unit of the Poseidon drone are underway,” an unnamed Russian defense official told the TASS news agency. The source also said the “the reactor is installed in the hull of the operating drone but the tests are being held as part of experimental design work rather than full-fledged sea trials at this stage.”

<https://nationalinterest.org/blog/buzz/russia-could-kill-american-carriers-without-poseidon-nuclear-torpedo-104352>

West Asia

Iran

Iran’s ballistic missiles ‘can carry nuclear weapons’

Arab News, December 05, 2019

UK, France, Germany say Tehran’s actions inconsistent with UN resolution

JEDDAH: Britain, France and Germany on Thursday accused Iran of developing ballistic missiles capable of carrying nuclear warheads. In a letter to UN Secretary General Antonio Guterres, UN ambassadors for the three countries said Tehran’s actions were inconsistent with the UN resolution enshrining the Joint

Comprehensive Plan of Action (JCPOA), the 2015 agreement to curb Iran's nuclear program in exchange for the easing of international sanctions.

The envoys' letter referred to video footage on social media in April of the test flight of a new Shabab-3 medium range ballistic missile variant that was "technically capable of delivering a nuclear weapon."

<https://www.arabnews.com/node/1594586/middle-east>

Is Iran's missile program inconsistent with Resolution 2231?

Javad Heirannia, Tehran Times, December 10, 2019

France, Britain, and Germany sent a letter to the UN Secretary-General Antonio Guterres on December 4 in which they claimed that some of Iran's ballistic missile activities are inconsistent with the UN Security Council Resolution 2231. In the letter circulated among the Security Council members, the three European countries, which are signatory to the JCPOA, urged Guterres to describe Iran's ballistic missiles as inconsistent with Resolution 2231 in the next report on the country's missile program. Such claims are also made by certain Western think tanks. They argue that Iran intends to develop missiles capable of delivering nuclear weapons. Their argument is based on the shape and the nose cone of some missiles and also Iran's satellite launches which they claim is in tandem with launching long-range missiles. What does Resolution 2231 state about Iran's missile program?

Resolution 2231 calls on Iran to restrain the development of a specific type of missile. The request is not legally binding. However, the Resolution 1929, which was canceled when the Resolution 2231 was adopted in July 2015, stated: "the UN Security Council Decides that Iran shall not undertake any activity related to ballistic missiles capable of delivering nuclear weapons". The important question is which organization is supposed to verify countries' missile programs? That is, based on which rule, the

European countries have considered Iran's missile program in contravention with Resolution 2231 and believed that Iran has nuclear-capable missiles?

<https://www.tehrantimes.com/news/442866/Is-Iran-s-missile-program-inconsistent-with-Resolution-2231>

Iran vs. Israel: A (Nuclear?) War That Should Never Be Fought:

Robert Farley, National Interest, December 14, 2019

Who would win? How many people would be impacted? Would America get dragged in? Worries over war in the Middle East have largely shifted away from the tense relationship between Iran and Israel. Turkey's ongoing conflict with the Kurds and Iran's own jousting with Saudi Arabia have taken center stage, although Israel's concern over growing Iranian influence has not abated. In such an unpredictable security environment, however, war remains a possibility. How might a hot war between Israel and Iran play out?

<https://nationalinterest.org/blog/buzz/iran-vs-israel-nuclear-war-should-never-be-fought-105167>

Turkey

Turkey, Not Trump, Is the Biggest Threat to NATO Right Now

Simon A. Waldman, Haaretz, December 1, 2019

Tuesday's NATO summit in London marks 70 years of the world's longest and most successful military alliance. However, behind the smiles and handshakes, there will be serious concerns about NATO's future. U.S. President Donald Trump has NATO in his sights, recently moving to substantially cut its contribution to the NATO budget; France's President Emmanuel Macron recently declared that NATO is becoming "brain-dead."

Today, however, the main security concerns of NATO are Russian

belligerency, the spread of weapons of mass destruction, the deteriorating security situation in the Middle East and the associated threats of migration and terrorism. If anything, Turkey has contributed to the proliferation of these security threats.

With Turkey appearing more of a hindrance to NATO than an asset, it begs the question what can be done? There is no mechanism or precedent for expelling a NATO member.

One possibility is to try to amend the North Atlantic Treaty to allow for the sanctioning or expulsion of a member state. However, this is unlikely to succeed: it would need unanimous support - and Turkey could just veto it. Other NATO members might also resist out of concern that they may one day be sanctioned.

<https://www.haaretz.com/middle-east-news/.premium-turkey-not-trump-is-the-biggest-threat-to-nato-right-now-1.8201531>

Don't Blame Turkey for NATO's Woes

Sinan Ulgen, Foreign Policy, December 3, 2019

In an interview with the Economist a few weeks ago, French President Emmanuel Macron said the alliance was experiencing "brain death." His argument was that under U.S. President Donald Trump, the United States was no longer interested in the defense of Europe. He also cited Turkey's cross-border operation into Syria as evidence of the political dysfunction of the alliance.

Last week, Ankara was criticized for blocking a NATO defense plan for the Baltic states and Poland. All of this prompts the question: Has Turkey really become a threat to NATO's political cohesion?

The answer is not simple. NATO is currently adapting to changes in the global security environment. Despite claims to the contrary, NATO is a dynamic alliance. It has taken stock of the changing landscape since the end of the Cold War and is striving to adapt its doctrine and strategy to new conditions.

The political momentum for this transformation was provided by the Strategic Concept of 2010, in which NATO reenvisioned its role in defending the security of its members. Alliance leaders agreed to streamline NATO capabilities to enhance their collective defense beyond territorial defense and improve the alliance's role in crisis management. The Strategic Concept heralded a change in how alliance members viewed their national security and the role they ascribed to NATO.

<https://foreignpolicy.com/2019/12/03/dont-blame-turkey-for-natos-woes/>

Who benefits from a NATO without Turkey?

Merve ^aebnem Oruç, Daily Sabah, December 4, 2019

Some Russian military experts and diplomatic sources admit that it was a huge mistake cornering Turkey at the end of the 1940s as that pressure made it become a member of NATO. How different the situation is today. In the future, we might hear such words from NATO as some NATO countries are making the same mistake that the Soviets made before.

Relations of Western countries such as the U.S and France with Turkey have hit a low point recently, despite the close relationship between President Recep Tayyip Erdoğan and U.S. President Donald Trump. As it is impossible to isolate problems between, for instance, Turkey and the U.S. or Turkey and France, the Turkey-NATO relationship is also in troubled waters. Moreover, this ongoing situation paves the way for hot debates, not only within NATO's inner sanctum but also in front of the microphones.

As a matter of fact, the so-called "values" of democracy, freedom and the rule of law, which are used as a stick toward Turkey, are not the main concerns of the NATO allies. When you check, you can see other NATO members with bad records regarding these values, but the leading allies chose to stay silent about

that. Then what is the allies' problem with Turkey?

Let's make a list: Turkey purchased the S-400 defense missile system from Russia after its fruitless efforts to buy such defense systems from Western countries.

Turkey unilaterally launched its third ground operation in Syria against the People's Protection Units (YPG), which is very well known as the Syrian branch of the outlawed PKK, a terror organization listed not only by Turkey but also the U.S. and the EU.

<https://www.dailysabah.com/columns/merve-sebnem-oruc/2019/12/06/who-benefits-from-a-nato-without-turkey>

Who's instructing the anti-Canal Istanbul 'Montreux lobby'? Map is memory; it shows future as much as it does history. From the Silk Road to the Bering Strait: Wealth, power map, our country's surface area all changed! After Canal Istanbul they're going to claim we have 'nuclear weapons.' Let's see what happens.

Ibrahim Karagül, Yeni Safak, December 13, 2019

Map is memory, experience, power; it is nations' line of destiny. When you look at the map, you not only see the past but also the future. The map is a source of the most valuable information.

The map will show you nations' rise and falls, the strengthening and division of states, the reasons underlying past wars and crises, whose star will shine and whose will fall in the future. The map presents political theories, security theories, the reason behind alliances and major disintegrations, why civilization basins and certain regions have become barren.

After Canal Istanbul they're going to take to the streets claiming we have 'nuclear weapons.' This is a series of opposition that has been ongoing ever since the start. They have now been steered towards the Canal

Istanbul project. In the very near future, they are going to wreak havoc saying "Turkey is working on nuclear weapons." A process that started in Israel and is continuing in the U.S. has already been launched. It will not be long before it comes to Turkey. Certain groups within will be activated. They have already been handed their next agenda following Canal Istanbul.

<https://www.yenisafak.com/en/columns/ibrahimkaragul/whos-instructing-the-anti-canal-istanbul-montreux-lobby-map-is-memory-it-shows-future-as-much-as-it-does-history-from-the-silk-road-to-the-bering-strait-wealth-power-map-our-countrys-surface-area-all-changed-after-canal-istanbul-theyre-going-to-claim-we-have-nuclear-weapons-lets-see-what-happens-2047262>

East Asia

North Korea

N. Korea's shifting demands

Tong Kim, Korea Times, December 2, 2019

Last April North Korean leader Kim Jong-un set a year-end deadline for U.S. flexibility to accept Pyongyang's demands. Last week Stephen Biegun, top U.S. nuclear negotiator and a nominee for deputy secretary of state, said the deadline was "an artificial one" — an implication that the U.S. won't make a major policy adjustment to meet the deadline and that the current stalemate may pass over the year-end. Announcing the deadline, Kim said he would take a "new path" if the deadline is missed. North Korean officials have suggested, as foreign observers speculated, that a "new path" points to resuming nuclear and ICBM tests, terminating negotiations and returning to confrontation and tension.

The North conducted another test of "a super-large multiple rocket launch system" Nov. 28 — the fourth one since August — firing two projectiles 30 seconds apart toward the East Sea. The system is known as a hybrid of ballistic missile technology that carries four large rockets. Some news outlets called the firing a

Thanksgiving reminder to Washington of Kim's deadline.

http://www.koreatimes.co.kr/www/opinion/2019/12/137_279633.html

North Korean missile aggrandizement

Liang Tuang Nah Korea Times, December 4, 2019

The recent barrage of missile and multiple rocket launcher tests by North Korea can be analyzed using political, military and economic lenses. However, whichever way one examines Pyongyang's motivations, it is clear that the proverbial leopard never changes its spots. With North Korea's 13th missile test to date since May, a fair case can be made that the launch of two projectiles from what is presumed to be a super-large multiple rocket launcher Nov. 28 is a political attempt to signal displeasure with the crushing economic sanctions that have been placed on the North by the United Nations Security Council (UNSC) since 2016.

As the DPRK's mercurial leader, Kim Jong-un, has publicly given their prime national adversary, the U.S., until the end of this year to introduce new and substantial concessions involving sanctions lifting in return for denuclearization steps on Pyongyang's part, destabilizing missile tests serve as political signaling to remind Washington to take this ultimatum seriously. But inasmuch as Kim's political motivations are relevant, the military and economic implications of the recent short-range missile and multiple rocket launcher tests also deserve attention, for they highlight the North's constraints and indicate further antagonism. Military, economic considerations behind recent missiles

http://www.koreatimes.co.kr/www/opinion/2019/12/137_279745.html

Rocketman vs. Dotard: war of words is back

Korea Times, December 10, 2019

Tensions are quickly rising between the

United States and North Korea, which has ramped up pressure as it demands concessions by President Donald Trump's administration by the end of the year. The United States called a UN Security Council meeting for Wednesday on North Korea's series of rocket launches, the latest return to antagonism as diplomacy languishes. Monday's announcement came two days after North Korea claimed to have carried out a "very important" but otherwise unspecified test, in a hint that it may have further actions in store.

Trump has met three times with North Korean leader Kim Jong Un to discuss Pyongyang's nuclear program, describing him a friend and hailing the comparative calm achieved since 2017 when fears were growing of all-out war. But North Korea is seeking a comprehensive deal that includes sanctions relief, especially with Trump heading next year into a potentially difficult re-election fight.

http://www.koreatimes.co.kr/www/nation/2019/12/103_280059.html

North Korea's hardline strategy on US and 'North Wind'

Jang Sung-min, Korea Times, December 11, 2019

The game of nuclear chicken has resumed between the U.S. and North Korea. North Korea's state media announced Sunday that it carried out a "very important test" at the Tongchang-ri Rocket Testing Station on Saturday. The North's Korean Central News Agency (KCNA) said the results "will have an important effect on changing the strategic position of the DPRK once again in the near future." It suggests the North will likely conduct a ground-based test of a new high-thrust engine for an intercontinental ballistic missile (ICBM).

With the continued development of its nuclear capability, Pyongyang is turning up the pressure on the U.S. for concessions. North Korea has continued to emphasize its end-of-year deadline for the United States to change its approach to their stalled nuclear disarmament talks.

The North's hardline stance is getting stronger. North Korean Ambassador to the United Nations Kim Sung said the same day of the "very important test" that denuclearization had been taken off the negotiating table. President Donald Trump has already grasped the intention of the North Korea's missile engine test. He said at the White House before leaving for Florida, Saturday, "I'd be surprised if North Korea acted hostilely. He (Kim Jong-un) knows I have an election coming up. I don't think he wants to interfere with that, but we'll have to see." Trump was sending Kim a warning message not to intervene in the upcoming U.S. presidential election.

http://www.koreatimes.co.kr/www/opinion/2019/12/137_280124.html

South Korea

Nuclear phase-out policy will hurt economic growth: KERI

Kwak Yeon-soo, Korea Times, December 8, 2019

President Moon Jae-in's nuclear power phase-out policy will raise the country's electricity rates significantly in the coming decades, gradually hurting the country's economic growth, a local research institute said Sunday. In a report released Sunday, the Korea Economic Research Institute (KERI) expects that the government's nuclear phase-out policy will increase the electricity rates by 25.8 percent in 2030 and 33 percent in 2040 compared with those in 2017.

http://www.koreatimes.co.kr/www/tech/2019/12/129_279982.html

UN Security Council to meet this week to discuss North Korea's provocation report

Korea Times, December 10, 2019

The United Nations Security Council will meet this week to discuss North Korea's recent missile launches and the possibility of an escalatory provocation by the regime, Reuters reported Monday, citing diplomats and a request from the United States. The

meeting will be held publicly Wednesday, according to Reuters, just days after North Korea announced it conducted an unspecified "very important test" at its Dongchang-ri satellite launch site. Experts have suggested the test on Saturday may have involved an engine for a new long-range missile.

That the request was made by the U.S., which serves as president of the council this month, may indicate that Washington will not tolerate the latest escalation of threats by the North.

http://www.koreatimes.co.kr/www/nation/2019/12/103_280053.html

Second Korean War 'possible'

Park Si-soo Korea Times, December 13, 2019

Are the two Koreas headed for war again?

Graham T. Allison, a famed American political scientist at Harvard University and former U.S. Assistant Secretary of Defense for Policy and Plans, says it's "possible." He told a recent academic forum in Japan that the chance of a second Korean War is "increasing" as the impasse in denuclearization negotiations between North Korea and the U.S. continues, especially with the year-end deadline for talks rising on the horizon.

According to the Japanese daily Sankei Shimbun that covered the forum on Thursday, Allison said the probability of the two Koreas going to war was "lower than 50 percent, but it's quite possible." Depicting the current situation as "very dangerous," Allison called on Japan and China to play their roles "immediately" to avoid war, according to Sankei.

http://www.koreatimes.co.kr/www/nation/2019/12/113_280269.html

NK could shutdown nuke talks unless US does U-turn: think tank

Korea Times, December 13, 2019

North Korea could announce an end to denuclearization talks with the United

States when it convenes a meeting of the ruling Workers' Party later this month, a state-run think tank said Friday. The North said last week it will convene a plenary meeting of the Central Committee of the WPK later this month to address "crucial issues in line with the needs of the development of the Korean revolution and the changed situation at home and abroad."

The announcement came as Pyongyang has ramped up pressure on Washington to come up with a new proposal by the end of this year to move deadlocked denuclearization negotiations forward.

http://www.koreatimes.co.kr/www/nation/2019/12/103_280254.html

Pyongyang trapped in illusion of 'North Korean superiority'

Cha Du-hyeon, Korea Times, December 14, 2019

Unlike the reconciliatory and cooperative inter-Korean mood last year, 2019 was the year that North Korea continued its aggressive action toward the South. In 2019, Pyongyang clearly condemned South Korea's role as a mediator and facilitator through Kim Jong-un's speech at the 14th Supreme People's Assembly on April 12. This attitude remained even after the ROK-DPRK-U.S. Summit at Panmunjeom on June 30.

North Korea tested eight short-range projectiles between July and September, denouncing ROK-U.S. joint military drills. This was in conflict with Kim mentioning that he was "not opposing the annual ROK-U.S. joint military exercise or training" during a South Korean delegation's visit to the North in 2018.

http://www.koreatimes.co.kr/www/opinion/2019/12/137_280259.html

O. Think Tank

IAEA Mission Says Indonesia Strengthened Nuclear and Radiation Safety, Sees Areas for Enhancement

International Atomic Energy Agency, December 4, 2019

An International Atomic Energy Agency (IAEA) team of experts said Indonesia has made progress in strengthening its regulatory framework for nuclear and radiation safety, addressing most of the recommendations made during an initial review in 2015. The team also noted areas for further enhancement, including the need to maintain and expand qualified staff to meet future needs.

The Integrated Regulatory Review Service (IRRS) team today concluded an 11-day follow-up mission to review Indonesia's implementation of recommendations and suggestions made during an IRRS mission in August 2015. The mission was conducted at the request of the Indonesian Government and hosted by the country's Nuclear Energy Regulatory Agency (BAPETEN). IRRS missions are designed to strengthen the effectiveness of the national nuclear and radiation safety regulatory infrastructure, based on IAEA safety standards and international good practices, while recognizing the responsibility of each country to ensure nuclear and radiation safety.

<https://www.iaea.org/newscenter/pressreleases/iaea-mission-says-indonesia-strengthened-nuclear-and-radiation-safety-sees-areas-for-enhancement>

Japan Downplays Possibility of Hosting INF-Range Missiles

Arms Control Association, December 4, 2019

Japan's new defense minister downplayed the prospect that Japan might host U.S. intermediate-range missiles formerly

banned by the Intermediate-Range Nuclear Forces (INF) Treaty. In an Oct. 31 interview with *The Financial Times*, Defense Minister Taro Kono said, "The U.S. doesn't have non-nuclear missiles that can be deployed yet. Maybe they're in the phase of development. We have not been discussing any of it."

U.S. Defense Secretary Mark Esper said in August after the demise of the INF Treaty that he would like to see the deployment of U.S. conventional, ground-launched, intermediate-range missiles in Europe and Asia, ideally as soon as possible. South Korea and Australia said at the time that they were not considering such a deployment.

Meanwhile, Russian Foreign Minister Sergey Lavrov in November continued to rebuke the Trump administration for "dismantling" the treaty, saying that "our American colleagues were only engaged in searching for pretexts to get rid of the INF Treaty." He also stated that Moscow will not deploy ground-launched, intermediate-range missiles until the United States does.

<https://www.armscontrol.org/act/2019-12/news-briefs/japan-downplays-possibility-hosting-inf-range-missiles>

Decision on Autonomous Weapons Talks Eludes CCW

Arms Control Association, December 4, 2019

States parties to the Convention on Certain Conventional Weapons (CCW) discussed in November the danger of lethal autonomous weapons systems, often referred to as "killer robots," but could not agree to begin a formal process of creating a legal instrument to govern their development and use. This is the fifth year in which the topic has been addressed by the CCW, which seeks to control especially harmful or indiscriminate conventional arms.

In the final report of the CCW's annual meeting, adopted by consensus after considerable debate, the members of the CCW endorsed guiding principles for autonomous weapons that had been drafted in August by a Group of Governmental Experts. These state that international humanitarian law applies fully to

autonomous weapons and that "human responsibility for decisions on the use of weapons systems must be retained."

Some parties, as well as civil society representatives, derided the lack of progress toward a more comprehensive prohibition. Several dozen states are in support of some form of legal framework binding autonomous weapons development and use, and 30 have explicitly supported banning them by treaty, according to the Campaign to Stop Killer Robots. The group, a coalition of nongovernmental organizations, stated that "pressure is building on states to launch negotiations on a new treaty on fully autonomous weapons without delay."

<https://www.armscontrol.org/act/2019-12/news-briefs/decision-autonomous-weapons-talks-eludes-ccw>

Three Decades of Chemical Weapons Elimination: More Challenges Ahead

Paul F. Walker, Arms Control Association, December 4, 2019

As states-parties to the Chemical Weapons Convention (CWC) convened for their 24th and most recent conference in November in The Hague, it was clear the treaty has accomplished a great deal, but it was also apparent that the work of eliminating the threat of chemical weapons is not over.

As the head of the Organisation for the Prohibition of Nuclear Weapons (OPCW), Fernando Arias, noted in his opening statement, "The complete elimination of declared chemical weapons, which is a key goal of the convention, is nearing. Yet, challenges to the norms of the convention are serious, as the use of chemical weapons in Iraq, Malaysia, Syria, and the United Kingdom has proven."¹

Even as the final declared stockpiles of banned chemical agents are destroyed and work continues to bring the few remaining holdout states into compliance with the

treaty, in the years ahead the OPCW will remain the main line of defense against the reemergence of chemical weapons.

<https://www.armscontrol.org/act/2019-12/features/three-decades-chemical-weapons-elimination-more-challenges-ahead>

And the prize for global nuclear security goes to... China

Sara Z. Kutchesfahani, Bulletin of Atomic Scientists, December 6, 2019

In the mass media lately—and in presidential tweets—China has often come off poorly, due in part to the Chinese government's authoritarian stance on human rights, its trade practices, its reliance on heavy-handed surveillance of its population, and its recent history of suppressing debate. But in at least one area, the Chinese government shines: nuclear security.

In fact, when it comes to nuclear security policies and practices, as well as laws, regulations, management, monitoring, and the structure of emergency response, the country is unusually transparent—and readily meets international standards. As a result, China is poised to play a leading role in global nuclear risk reduction efforts in the coming decades, at home and abroad. This trend can be seen by China's many commitments within the Nuclear Security Summit process, its cooperation in bilateral nuclear security structures with the United States, and its efforts to remove highly enriched uranium from a Nigerian research reactor (that China itself played a role in building).

<https://thebulletin.org/2019/12/and-the-prize-for-global-nuclear-security-goes-to-china/>

Turkey's military drones: an export product that's disrupting NATO

Dan Gettinger, Bulletin of Atomic Scientist, December 6, 2019

Just over a decade ago, the prototype of an unmanned aircraft that would become the Bayraktar TB2 took off for its maiden flight

at Sinop Airport on the Black Sea. There were few signs then that the mid-sized, twin-boom aircraft would become Turkey's first indigenously produced armed drone and the backbone of its unmanned air force. At the time, domestic drone manufacturers struggled against technical difficulties and foreign competition. Ten years on, however, the situation is radically different: Ankara's drone program has morphed into a successful industry that's already exporting products. It's also a potent military force that's further straining the NATO alliance.

Turkey is wielding its new arsenal in a military campaign against Kurdish fighters in Syria, part of a long-standing conflict that has taken on new significance since US President Donald Trump announced a controversial decision to withdraw troops from northern Syria this fall, opening up allied Syrian Kurds to Turkish attacks. The president of France, another NATO ally of Turkey's, recently accused Turkey of "fighting against those who fight with us." Turkey's drones have enabled a conflict in an already volatile region; more worrisome, Ankara's successful drone program is an example that several other countries hope to emulate.

Drones have proliferated to militaries around the world at a dramatic rate. According to The Drone Databook, a study of military drone capabilities I published with the Center for the Study of the Drone in September, at least 95 countries have a military drone program. These programs are growing in size and complexity. Nearly 60 countries have activated at least 267 units to operate drones. Like many other countries, Turkey has prioritized the development of a domestic industry in order to reduce its dependency on systems made by the United States and Israel, the traditional drone-production powerhouses.

<https://thebulletin.org/2019/12/turkeys-military-drones-an-export-product-thats-disrupting-nato/>

P. Interviews/Reports

Nuclear No First Use Spotlight

Union of Concerned Scientists, December 6, 2019

UCS is starting with a simple and commonsense principle: The United States must commit to never initiate a nuclear conflict. A No First Use policy: Reduces the risk that another country will use nuclear weapons against the United States, either preemptively or in retaliation. Contributes to global stability, by reaffirming our leadership in arms control and risk reduction efforts, and inspiring other countries to take similar steps. Makes it less likely that nuclear weapons will ever be used.

<https://www.ucsusa.org/resources/nuclear-no-first-use-spotlight>

<https://www.ucsusa.org/sites/default/files/2019-12/NuclearNoFirstUseSpotlight.pdf>

I hope the next ISRO chief is a woman: Susmita Mohanty

Madhumathi D.S., The Hindu, December 13, 2019

The founder-CEO of India's first private space start-up company says privatisation can create thousands of jobs in the space sector

Susmita Mohanty, founder-CEO of India's first private space start-up, Earth2Orbit, responds to everything that is space – be it engineering, enterprise, research, design, architecture, international advocacy, adventure or imagination. She carved out her many extraordinary roles at a young age and across three continents. She has been named among BBC's 100 Women of 2019. A self-confessed "daughter of ISRO" and protégée of Arthur C. Clarke, the "anti-status-quo-ist" Mohanty, based in Bengaluru, articulates some bold ideas on the world of space and its women and space-related enterprise. Edited excerpts:

The BBC 100 Women 2019 recognises your role in the space arena. What do you think

of the representation of women in space in India and across the world?

I grew up in the early 70s among the pioneers of the Indian space programme. To me, women in space were not a novelty. My father and his colleague, Dr. Dipti Rastogi, were deputy directors of ISRO's Space Applications Centre. ISRO has one of the best gender ratios among space agencies, as we saw during the Mars Orbiter Mission. NASA has always had a fair number of women scientists and engineers. Since the late 90s, when I began my space career, the European Space Agency (ESA) too has improved its numbers. JAXA (Japan Aerospace Exploration Agency) still has some way to go.

And what about women in leadership positions in space agencies?

Abroad, we are starting to see more women leaders in space organisations. Pascale Ehrenfreund is the [head] of the German space agency, DLR, and Simonetta Di Pippo is Director of the UN Office for Outer Space Affairs (UNOOSA). The three of us are members of the World Economic Forum's Global Future Council on Space Technologies. Last month, Ehrenfreund became the first woman president of the International Astronautical Federation. MIT's Dava Newman was Deputy Administrator of NASA under Obama. Mazlan Othman used to head the Malaysian space agency. I hope ISRO gets a woman chairperson in the near future.

<https://www.thehindu.com/sci-tech/science/i-hope-the-next-isro-chief-is-a-woman-susmita-mohanty/article30297376.ece>

Nuclear Power in India

World Nuclear News, December, 2019

- India has a largely indigenous nuclear power programme.
- The Indian government is committed to growing its nuclear power capacity

as part of its massive infrastructure development programme.

- The government has set ambitious targets to grow nuclear capacity. At the end of 2019 seven reactors were under construction in India, with a combined capacity of 5.4 GWe.
- Because India is outside the Nuclear Non-Proliferation Treaty due to its weapons programme, it was for 34 years largely excluded from trade in nuclear plant and materials, which hampered its development of civil nuclear energy until 2009.
- Due to earlier trade bans and lack of indigenous uranium, India has uniquely been developing a nuclear fuel cycle to exploit its reserves of thorium.
- Since 2010, a fundamental incompatibility between India's civil liability law and international conventions limits foreign technology provision.

India in 2017 produced 1532 TWh of electricity, 1134 TWh (74%) of this from coal, 142 TWh (9%) from hydro, 71 TWh (5%) from natural gas, 77 TWh (5%) from solar and wind, 38 TWh (2.5%) from nuclear, 45 TWh from biofuels, and 25 TWh from oil. There were virtually no imports or exports of electricity in 2017, and about 17% of production was lost during transmission. Consumption in 2017 came to about 1164 TWh, or about 870 kWh per capita. Total installed capacity as of October 2019 was about 365 GWe, consisting of 229 GWe fossil fuels, 73 GWe renewables (including small hydro), 45 GWe large hydro, and less than 7 GWe nuclear.

<https://www.world-nuclear.org/information-library/country-profiles/countries-g-n/india.aspx>

World Energy Needs and Nuclear Power

World Nuclear Association, December, 2019

- The world will need significantly increased energy supply in the future,

especially cleanly-generated electricity.

- Electricity demand is increasing about twice as fast as overall energy use and is likely to rise by more than half to 2040.
- Nuclear power provides over 10% of the world's electricity, and 18% of electricity in OECD countries.
- Almost all reports on future energy supply from major organisations suggest an increasing role for nuclear power as an environmentally benign way of producing reliable electricity on a large scale.

Growth in the world's population and economy, coupled with rapid urbanisation, will result in a substantial increase in energy demand over the coming years. The United Nations (UN) estimates that the world's population will grow from 7.6 billion in 2017 to 9.7 billion by 2050. The process of urbanisation – which currently adds a city the size of Shanghai to the world's urban population every four months or so – will result in approximately two-thirds of the world's people living in urban areas by 2050 (up from 55% in 2018). The challenge of meeting rapidly growing energy demand, whilst reducing harmful emissions of greenhouse gases, is considerable. In 2018 global atmospheric concentrations of carbon dioxide rose by 1.7%, 70% higher than the average increase since 2010.

<https://www.world-nuclear.org/information-library/current-and-future-generation/world-energy-needs-and-nuclear-power.aspx>

The Purpose, Scope, and Content of Safety Cases

Office of Nuclear Regulation, December, 2019

This revision includes:

General restructuring/reformatting to provide greater clarity

Review against modern relevant good practice

Visual aids summarising typical content and structure, and lifecycle of a safety case

Expanded explanation of claims, arguments and evidence

Inclusion of reference to defence in depth in the safety case

*[http://www.onr.org.uk/operational/
tech_asst_guides/ns-tast-gd-051.pdf](http://www.onr.org.uk/operational/tech_asst_guides/ns-tast-gd-051.pdf)*

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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