

Nuclear, Missile & Space Digest

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A Fortnightly Newsletter from the Indian Pugwash Society

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A. India

India, Pakistan exchange list of nuclear installations, prisoners

The Hindu, January 01, 2022

Pakistan and India on Saturday exchanged a list of their nuclear installations that cannot be attacked in case of an escalation in hostilities, as part of an annual ritual that has been in practice between the two neighbours for more than three decades, a Foreign Office statement said here. The two countries also exchanged lists of prisoners held in each other's prisons, which include civilians, defence personnel and fishermen, it said.

<https://www.thehindu.com/news/national/india-pakistan-exchange-list-of-nuclear-installations-prisoners/article38086493.ece>

The first of the Luna missions

The Hindu, January 02, 2022

Launched on January 2, 1959, Luna 1 was the first human-made object to escape the grip of the Earth's gravity. Even though it didn't meet its primary objective of impact with the moon's surface, it achieved a lunar flyby before going on to become an artificial planet around the sun. The Luna programme is one of the most successful programmes in space exploration. It included a series of robotic spacecraft missions that were aimed at the moon by the Soviet Union in the period between 1959 and 1976. Designed as orbiters or landers, 15 missions were successful in this programme, accomplishing a series of firsts in our foray towards the moon.

<https://www.thehindu.com/children/luna-1-the-first-of-the-luna-missions/article64825302.ece>

'ISRO gearing up for multiple space missions in 2022'

The Hindu, January 04, 2022

After a rather muted 2021 in terms of satellite launches, Indian Space Research Organisation (ISRO) is gearing up for a number of missions in 2022 including the

launch of the first unmanned mission of Gaganyaan, its Chairman, K. Sivan said. In his New Year's message for 2022, Mr. Sivan said ISRO had a number of missions to execute this year.

<https://www.thehindu.com/news/national/tamil-nadu/isro-gearing-up-for-multiple-space-missions-in-2022/article38103503.ece>

Third Arihant class submarine quietly launched in November

The Hindu, January 04, 2022

The third of the Arihant-class SSBN (Sub Surface Ballistic Nuclear) submarine code-named S4, was quietly launched some time in the last week of November in Visakhapatnam.

<https://www.thehindu.com/news/national/andhra-pradesh/third-arihant-class-submarine-quietly-launched-in-november/article38103275.ece>

Musk-backed Starlink to refund pre-orders in India after govt order

The Hindu, January 04, 2022

Starlink has already received over 5,000 pre-orders for its devices in India but is struggling to receive commercial licences without which it cannot offer services in the country. Billionaire entrepreneur Elon Musk's Starlink satellite internet venture told its members on Tuesday the Indian government had asked the company to refund all its pre-orders until it receives licences to operate in the country.

<https://www.thehindu.com/sci-tech/technology/musk-backed-starlink-to-refund-pre-orders-in-india-after-govt-order/article38123198.ece>

The status of the Nuclear Non-Proliferation Treaty

The Hindu, January 07, 2022

On Monday (January 3), five global nuclear powers, China, Russia, U.S., U.K., and France, pledged to prevent atomic weapons from spreading and avoid nuclear conflict. The joint statement was

issued after the latest review of the Nuclear Non-Proliferation Treaty (NPT), which first came into force in 1970, was postponed from its scheduled date of January 4 to later in the year due to the COVID-19 pandemic.

<https://www.thehindu.com/news/international/the-status-of-the-nuclear-non-proliferation-treaty/article38164980.ece>

Weather radar at NIOT campus calibrated

The Hindu, January 07, 2022

The calibration of X Band Radar, installed at the campus of National Institute of Ocean Technology (NIOT), Pallikaranai, was carried out on Thursday using a drone. Scientists from Indian Space Research Organisation (ISRO) and India Meteorological Department (IMD), carried out the calibration of the indigenous weather radar, a press release said. This was the first time that such a drone-based calibration was done for the weather radar. The city's second radar would capture weather events occurring within a radius of 100 km in all directions and provide information, including rain intensity.

<https://www.thehindu.com/news/national/tamil-nadu/weather-radar-at-niot-campus-calibrated/article38161838.ece>

Latest Kudankulam components in preparation

World Nuclear News, January 13, 2022

Main components for India's Kudankulam unit 6 are being manufactured in Russia. Construction of the VVER-1000 reactor officially began one month ago.

<https://www.world-nuclear-news.org/Articles/Latest-Kudankulam-components-in-preparation>

Qualification testing of cryogenic engine for Gaganyaan programme successful: ISRO

The Hindu, January 13, 2022

The Indian Space Research Organisation (ISRO) has successfully conducted the qualification test of cryogenic engine for the

Gaganyaan programme for a duration of 720 seconds at ISRO Propulsion Complex, Mahendragiri, Tamil Nadu.

<https://www.thehindu.com/news/national/qualification-testing-of-cryogenic-engine-for-gaganyaan-programme-successful-isro/article38264822.ece>

B. Russia

Russia's nuclear plants produced record-high 222 billion kWh 2021

TASS, January 01, 2022

The world's biggest and most powerful non-nuclear icebreaker Viktor Chernomyrdin will be used as a passenger vessel for Arctic cruises. The icebreaker will take onboard up to 93 passengers at a time, press service of the sea port authority, Rosmorport, told. The upgrade is due to be completed before April 1, according to the state purchases' web portal. The contract's cost is 4.2 million rubles (\$55,000). The contractor will install on the icebreaker additional lights, upgraded safety systems, and will do some other works, after which the Viktor Chernomyrdin will obtain the official class of a passenger vessel.

<https://tass.com/economy/1398999>

Drills of Russia's strategic nuclear forces to be held in early 2022, source says

TASS, January 03, 2022

Strategic command-and-staff exercises headlined Grom (Thunder) with the participation of all three components of Russia's strategic nuclear forces will take place in early 2022, a source close to Russia's Defense Ministry told. The strategic command-and-staff exercises of the strategic nuclear forces are held annually. Usually, within the framework of these drills, a subsurface missile carrier of the Northern Fleet launches an intercontinental ballistic missile (ICBM) against a target at the Kura proving ground on the Kamchatka Peninsula and a nuclear submarine of the Pacific Fleet

launches an ICBM against a target at the Chizha proving ground in northern Russia. The Russian Strategic Missile Forces also perform combat training launches of the ICBMs and cruise missiles are launched by the planes of the long-range aviation of the Aerospace Forces.

<https://tass.com/defense/1383569>

Leaders of Russia, China, US, UK, France adopt joint statement on preventing nuclear war

TASS, January 03, 2022

Leaders of Russia, the United Kingdom, China, the United States and France have released a joint statement on preventing a nuclear war and avoiding arms races, according to the document published on the Kremlin website. "The People's Republic of China, the French Republic, the Russian Federation, the United Kingdom of Great Britain and Northern Ireland, and the United States of America consider the avoidance of war between Nuclear-Weapon States and the reduction of strategic risks as our foremost responsibilities," the joint statement says. "We affirm that a nuclear war cannot be won and must never be fought," it reads.

<https://tass.com/politics/1383675>

Joint statement of five nuclear powers' leaders initiated by Russia - diplomat

TASS, January 03, 2022

The joint statement of the five nuclear powers - Russia, China, the UK, the US and France - on preventing a nuclear war and avoiding arms races was the initiative of Russia, Foreign Ministry Spokeswoman Maria Zakharova said in a statement published. "This document was formulated on our initiative and with the most active participation of Russian representatives. Its release was supposed to coincide with the start of Tenth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. It had been scheduled to open in New York on

January 4, but was postponed due to the worsening epidemiological situation in the United States. Nevertheless, given the importance and self-sufficiency of this joint statement, the nuclear powers decided not to delay its publication," the diplomat said.

<https://tass.com/politics/1383673>

Eighth round of talks on Iran nuclear deal continues in Vienna - Russia's envoy

TASS, January 04, 2022

The eighth round of Vienna talks on restoring the Joint Comprehensive Plan of Action (JCPOA), known as the Iran nuclear deal, continued after a New Year break in the form of informal meetings on Monday, Russia's Permanent Representative to the International Organizations in Vienna Mikhail Ulyanov, who heads the Russian delegation at the talks, wrote on Twitter. "After a short New Year break the 8th round of the Vienna Talks continues today in the form of informal meetings," he said. The eighth round of talks kicked off in Vienna on December 27. The negotiations seek to restore the original JCPOA and bring the US back into the agreement. Following a JCPOA Joint Commission meeting between Iran and the five world powers (Russia, the UK, Germany, China and France), the parties agreed to accelerate the process of drafting the agreement in the working groups. This round is expected to be the last, as the parties intend to complete the negotiations by February 2022.

<https://tass.com/politics/1383705>

NATO-Russia Council scheduled for January 12, confirms official

TASS, January 04, 2022

The alliance has confirmed that the NATO-Russia Council meeting will take place on January 12, calling on Moscow to consider "NATO's concerns about Russia's actions," the NATO official told. "The NATO Secretary General Jens Stoltenberg has convened a meeting of the NATO-Russia Council on 12 January 2022

in his capacity as the Chair of the NATO-Russia Council,” the statement reads. According to the NATO official, “any dialogue with Russia would have to proceed on the basis of reciprocity, address NATO’s concerns about Russia’s actions, be based on the core principles and foundational documents of European security, and take place in consultation with NATO’s European Partners.”

NATO has not revealed the agenda of the meeting so far. Earlier, Russia confirmed its intention to discuss with NATO the proposals on security guarantees, in particular, the withdrawal of US nuclear weapons from Europe, prevention of the deployment of NATO forces near Russian borders as well as abandoning the policy of engaging Ukraine and Georgia in the alliance. In December, Stoltenberg has repeatedly stated that he proposed to convene the NATO-Russia Council in early 2022 to address the situation in and around Ukraine and the claims about the alleged buildup of Russian troops near the Ukrainian border.

<https://tass.com/world/1383783>

Intense work to restore Iranian nuclear deal under way in Vienna – Russian envoy

TASS, January 05, 2022

Intensive informal consultations are under way in Vienna within the framework of talks to restore the Joint Comprehensive Plan of Action (JCPOA) on Iran’s nuclear program, said Russia’s Permanent Representative to the International Organizations in Vienna Mikhail Ulyanov, who heads the Russian delegation at the talks. “The eighth round of Vienna talks continues. Intensive informal consultations in various formats are under way. The work to lift [US] sanctions [on Iran], on nuclear issues and sequence of steps to restore JCPOA continues,” he said. When asked whether any progress has been made, the head of the Russian delegation replied that it is already visible. “The main stumbling blocks are becoming clearer,” he added.

On January 4, the Russian diplomat held three separate working meetings in Vienna. He met with Iran’s chief negotiator, Deputy Foreign Minister Ali Bagheri Kani to discuss the main issues that are yet to be settled in the course of the negotiations. Ulyanov also discussed the current situation and possible further steps with European Union coordinator Enrique Mora and US Special Envoy for Iran Robert Malley. The eighth round of talks kicked off in Vienna on December 27. The negotiations seek to restore the JCPOA in its original form and bring the US back into the agreement. Following a JCPOA Joint Commission meeting between Iran and the five world powers (Russia, the UK, Germany, China and France) on December 27, 2021, the parties agreed to accelerate the process of drafting the agreement in the working groups. This round is expected to be the last, as the parties intend to complete the negotiations by February 2022.

<https://tass.com/world/1383909>

Cutting-edge anti-submarine missile system accepted for service in Russian Navy

TASS, January 11, 2022

The latest Otvét (Response) anti-submarine missile system has been accepted for service in the Russian Navy, a source in the domestic defense industry told. “The Otvét anti-submarine warfare system has been accepted for service with the Russian Navy. It has been serial-supplied to the Navy’s ships for a year already,” the source specified. A source earlier told TASS that the state-of-the-art anti-submarine missile system had successfully passed state trials, which had been held from the board of the Project 22350 first serial-built frigate Admiral Kasatonov since 2019.

<https://tass.com/defense/1386213>

Russia's first newly-built Tu-160M 'White Swan' strategic bomber performs debut flight

TASS, January 12, 2022

A completely new Tupolev Tu-160M strategic missile-carrying bomber nicknamed the 'White Swan' by Russian military pilots performed its debut flight, the press office of the state tech corporation Rostec announced. The newly-built strategic bomber performed its flight at an altitude of 600 meters that lasted about 30 minutes. The crew of test pilots of the Tupolev Company conducted maneuvers making it possible to inspect the aircraft's stable and controlled operations in the air, the press office said. Russia's newly-built Tu-160M strategic missile-carrying bomber has 80% of its equipment upgraded, CEO of the United Aircraft Corporation (UAC) Yury Slyusar said.

"The new aircraft has 80% of its systems and equipment modernized," the Rostec press office quoted the chief executive as saying. The Tupolev Tu-160 strategic missile-carrying bomber can eventually carry new, including breakthrough weapons, Russian Industry and Trade Minister Denis Manturov said. "Today we see considerable prospects for the Tu-160 platform: its further development will make it possible to use it for new, including breakthrough weapons," the Rostec press office quoted the minister as saying.

<https://tass.com/defense/1386929>

Russia finds worrisome NATO's wish to lower nuclear threshold – diplomat

TASS, January 13, 2022

Russia is seriously worried by NATO's wish to lower the threshold for nuclear weapons use, Deputy Foreign Minister Alexander Grushko told a news conference following a meeting of the Russia-NATO Council. "In conducting their military policies, the United States and its allies have been trying to gain superiority in all media: on land, in the air

and at sea. Now there are also outer space and cyberspace. As well as all possible theaters of combat operations. Conceptually, operationally and technically the threshold of nuclear weapons use is being lowered. We see that the scenarios of various exercises incorporate the nuclear component, which causes our most serious concern," Grushko said. He pointed to the complete degradation of the arms control system.

"It all began when the United States pulled out of the anti-ballistic missile treaty. Then it prevented NATO countries from ratifying the agreement on the adaptation of the conventional forces in Europe (CFE) treaty, which might serve as a corner stone of European security. Then the US administration dropped the INF treaty (on the elimination of intermediate and shorter-range missiles). And last year the Open Skies Treaty was seriously undermined," Grushko concluded.

<https://tass.com/defense/1387211>

Non-deployment of attack weapons near Russia inseparable from other issues – Lavrov

TASS, January 13, 2022

The issue of non-deployment of attack weapons near Russia's borders must not be considered in the dialogue with the West separately from the main demand - NATO's non-expansion to the east, because otherwise it would hardly be of any importance, Russian Foreign Minister Sergey Lavrov said on Channel One's Great Game program. He recalled the initiative for a moratorium on the deployment of intermediate and shorter-range missiles, which Russian President Vladimir Putin put forward two years ago. The Russian leader then suggested coordinating verification measures, which the Russian Defense Ministry explained later.

<https://tass.com/defense/1387829>

NATO, US brought world close to brink of nuclear war during talks with Russia – expert

TASS, January 14, 2022

The behavior of the US and NATO during talks on security guarantees with Russia in Geneva and Brussels brought the world closer to the brink of the nuclear war and further consultations can be useful only in case the West changes its approaches, representative of the Schiller Institute in New York Richard Black.

<https://tass.com/world/1387969>

C. Europe

EU drafts plan to label gas and nuclear investments as green

Kate Abnett and Simon Jessop

Reuters, January 01, 2022

The European Union has drawn up plans to label some natural gas and nuclear energy projects as “green” investments after a year-long battle between governments over which investments are truly climate-friendly. The European Commission is expected to propose rules in January deciding whether gas and nuclear projects will be included in the EU “sustainable finance taxonomy”. This is a list of economic activities and the environmental criteria they must meet to be labelled as green investments. By restricting the “green” label to truly climate-friendly projects, the system aims to make those investments more attractive to private capital, and stop “greenwashing”, where companies or investors overstate their eco-friendly credentials. Brussels has also made moves to apply the system to some EU funding, meaning the rules could decide which projects are eligible for certain public finance. A draft of the Commission’s proposal, seen by Reuters, would label nuclear power plant investments as green if the project has a plan, funds and a site to safely dispose of radioactive waste. To be deemed green, new nuclear plants must receive construction permits before 2045.

<https://www.reuters.com/markets/commodities/eu->

[drafts-plan-label-gas-nuclear-investments-green-2022-01-01/](https://www.reuters.com/markets/commodities/eu-drafts-plan-label-gas-nuclear-investments-green-2022-01-01/)

Swedish police hunt for drone seen flying over Forsmark nuclear plant

Reuters, January 15, 2022

Police in Sweden deployed patrols and helicopters to the Forsmark nuclear plant to hunt for a large drone seen flying over the site late on Friday, but were unable to catch the unmanned vehicle, they said. The incident came a day after Sweden’s military started patrolling the main town on the Baltic Sea island of Gotland amid increased tensions between NATO and Russia and a recent deployment of Russian landing craft in the Baltic.

<https://www.reuters.com/world/europe/swedish-police-hunt-drone-seen-flying-over-forsmark-nuclear-plant-2022-01-15/>

D. Germany

Germany shuts three of its last six nuclear plants

Reuters, January 01, 2022

Germany has pulled the plug on three of its last six nuclear power stations as it moves towards completing its withdrawal from nuclear power as it turns its focus to renewables. The government decided to speed up the phasing out of nuclear power following Japan’s Fukushima reactor meltdown in 2011 when an earthquake and tsunami destroyed the coastal plant in the world’s worst nuclear disaster since Chernobyl in 1986.

<https://www.reuters.com/markets/commodities/germany-shuts-three-its-last-six-nuclear-plants-2022-01-01/>

E. France

Chooz 2 nuclear reactor outage extended after fault discovered

Reuters, January 06, 2022

The outage of the 1.5 gigawatt (GW) No.2 reactor at the Chooz nuclear power plant in northern France has been extended

after an inspection found the same fault as at the Civaux plant in the west of the country, operator EDF said. The two plants were shut down in December after discovery of corrosion in a safety system at the Civaux plant. The reactor outage was extended to Apr. 20 from the previous expected return date of Jan. 23.

<https://www.reuters.com/business/energy/chooz-2-nuclear-reactor-outage-extended-after-fault-discovered-2022-01-06/>

France sees new nuclear reactors going online by 2035-37 - minister

Reuters, January 06, 2022

The French government expects plans for new nuclear reactors should be submitted around 2023 with a target date of 2035-37 for the reactors to go online, junior environment minister Berangere Abba was quoted as saying in French daily Le Figaro. She said the new reactors would be EPR2 models, improved versions of utility EDF's (EDF.PA) troubled EPR model, which has suffered years of delays and billions of euros of cost overruns on models under construction in France and Finland.

<https://www.reuters.com/markets/commodities/france-sees-new-nuclear-reactors-going-online-by-2035-37-minister-2022-01-06/>

EDF's Penly nuclear reactor suffering corrosion problems -BFM

Reuters, January 14, 2022

One of two nuclear reactors at French utility EDF's Penly plant is suffering the same corrosion problem already detected or suspected on four other EDF reactors which have been halted, BFM TV reported on its website, quoting nuclear safety institute IRSN comments to French news agency AFP. EDF (EDF.PA) and nuclear regulator ASN were not immediately available for comment. An IRSN spokesperson said IRSN would not elaborate on the comments made to AFP.

<https://www.reuters.com/business/energy/edfs-penly-nuclear-reactor-suffering-corrosion-problems-bfm-2022-01-13/>

EDF hit by cap on power prices, nuclear reactor closures

Benjamin Mallet and Geert De Clercq

Reuters, January 14, 2022

The French government said that it had ordered state-owned utility EDF to sell more of its cheap nuclear power to smaller competitors in order to limit the increase of electricity prices in France. EDF said the measure could cost it up to 8.4 billion euros and dropped its earnings guidance, while the utility also lowered its nuclear production forecast after technical problems forced it to extend the outage of a fifth nuclear reactor.

The energy and environment ministry said in a joint statement EDF will have to increase by 20 terawatt-hour (TWH) to 120 TWH the volumes of nuclear power it sells to its smaller competitors this year in order to keep market prices down. The price at which EDF will have to sell that electricity will be increased to 46.2 euros per megawatt-hour from the current 42 euros/MWH, but that price is still below EDF's actual production costs and far below current market prices of more than 100 euros per MWH.

<https://www.reuters.com/business/energy/french-power-price-increase-will-remain-capped-4-2022-minister-2022-01-13/>

F. U.K.

EDF's Scottish nuclear power plant Hunterston B to close after 46 years

Reuters, January 07, 2022

EDF's (EDF.PA) Hunterston B nuclear power plant in Scotland will close after some 46 years of operation, the company said. Britain's nuclear power plants can supply around 20% of the country's electricity demand, but around half are set to close in the next four years as they reach the end of their currently scheduled lifespan. EDF first announced the closure of Hunterston, which was capable of

generating enough electricity to power around 1.7 million homes, in August 2020.

<https://www.reuters.com/markets/commodities/edfs-scottish-nuclear-power-plant-hunterston-b-close-after-46-years-2022-01-07/>

G. U.S.A.

U.S. senators say Cruz sanctions on Nord Stream 2 could harm relations with Germany

Richard Cowan and Timothy Gardner

Reuters, January 11, 2022

Several Democratic U.S. senators said late, after meeting with Biden administration officials, that they believe sanctions on Russia's Nord Stream 2 pipeline backed by Republican Senator Ted Cruz could harm relations with Germany. Under Secretary of State Victoria Nuland and President Joe Biden's global energy security adviser Amos Hochstein met on Monday behind closed doors with about 10 Democratic senators who have been undecided on the Cruz bill. The legislation is expected to get a Senate vote this week after both parties struck a deal last month, in which Cruz released his hold on dozens of Biden ambassador nominations. The deal requires the bill to get 60 votes — a high hurdle in the 50-50 Senate.

The bill would also have to pass in the House and be signed by President Joe Biden, a Democrat. Several senators told reporters that the administration officials were persuasive. Senator Chris Murphy said they made the case that Cruz's bill could harm relations with Germany's new government right when Washington needs its support to pressure Russia against an invasion of Ukraine.

<https://www.reuters.com/markets/commodities/us-senators-say-cruz-sanctions-nord-stream-2-could-harm-relations-with-germany-2022-01-11/>

Biden imposes first sanctions over North Korea weapons program after missile tests

David Brunnstrom and Chris Gallagher

Reuters, January 13, 2022

The Biden administration imposed its first sanctions over North Korea's weapons programs following a series of North Korean missile launches, including two since last week. The sanctions targeted six North Koreans, one Russian and a Russian firm Washington said were responsible for procuring goods for the programs from Russia and China. The U.S. Treasury said the steps aimed both to prevent the advancement of North Korea's programs and to impede its attempts to proliferate weapons technologies.

<https://www.reuters.com/world/asia-pacific/us-imposes-sanctions-north-koreans-russian-after-missile-tests-2022-01-12/>

West Asia

H. Iran

Foreign Ministry: No UN resolution bans Iran's space research program

Tehran Times, January 01, 2022

No UN Security Council resolution has banned Iran from conducting a space research program and related tests including in the field of satellite carriers, Iranian Foreign Ministry spokesman Saeed Khatibzadeh said in a statement. Khatibzadeh made the remarks in response to media hype by some U.S. and European officials regarding Iran's launch of three research devices into space upon the home-grown Simorgh satellite carrier. According to the Foreign Ministry website, Khatibzadeh said the Iranian people have an "inalienable right" to scientific and research advancements, particularly in the field of aerospace, and such meddling

statements will not be able to obstruct their will to progress. Therefore, he added, invoking United Nations Security Council Resolution 2231 is a pointless fallacy and essentially false. As it has been specified earlier, Iran is entitled to use peaceful technologies for scientific research purposes in line with international law and, in this regard, it will not wait for the opinions of governments which seek to impose their views on others, the spokesman remarked.

<https://www.tehrantimes.com/news/468683/Foreign-Ministry-No-UN-resolution-bans-Iran-space-research>

Iran space launch fails to put payloads into orbit, official says

Reuters, January 01, 2022

Iran's space launch failed to put its three payloads into orbit after the rocket was unable to reach the required speed, a defence ministry spokesman said in remarks carried on state television on Friday. The attempted launch, which came as indirect U.S.-Iran talks take place in Austria to try to salvage a 2015 nuclear deal, drew criticism from the United States, Germany and France. "For a payload to enter orbit, it needs to reach speeds above 7,600 (metres per second). We reached 7,350," the spokesman, Ahmad Hosseini, said in a documentary about the launch vehicle broadcast on state TV and posted online.

<https://www.reuters.com/lifestyle/science/iran-space-launch-fails-put-payloads-into-orbit-official-says-2021-12-31/>

JCPOA experience shows Iran cannot trust U.S.: analysis

Tehran Times, January 02, 2022

In a commentary on Dec. 28, Middle East Eye said the main lesson that the Iranian people and their rulers have drawn from their JCPOA experience is that Iran can never trust the U.S. The article says Iran wants a "sustainable" nuclear deal and this can be achieved only if U.S. sanctions against Iran are lifted permanently. Following is an excerpt of the article: the eighth round of negotiations between Iran and the five world

powers that are trying to revive the tattered 2015 Iran nuclear deal, known as the Joint Comprehensive Plan of Action (JCPOA), resumed on December 27. At the end of the previous round of talks, Iran's chief negotiator, Ali Bagheri Kani, said that "good progress" had been made. "Initially, the European participants [France, Germany and the United Kingdom] rejected Iran's proposals, but they finally agreed to continue the talks based on the Iranian draft," he stated.

<https://www.tehrantimes.com/news/468725/JCPOA-experience-shows-Iran-cannot-trust-US-analysis>

Credible guarantees vital for success of Vienna talks

Tehran Times, January 04, 2022

As negotiators from Iran and the P4+1 group of countries resume talks in Vienna, a set of thorny issues appears to require more time and energy. While recent rounds of talks focused on crafting a document setting out the principles for result-oriented negotiations, the current round is expected to get down to brass tacks. There are two main issues on the table in Vienna: First, how U.S. sanctions on Iran should be lifted. In other words, how Iran can verify the lifting of U.S. sanctions. On this issue, it seems there is a sort of consensus that the U.S., as the first party to renege on its commitments under the 2015 Iran nuclear deal, should take the first meaningful step. Second, the nuclear measures Iran needs to take if the nuclear deal is to be revived. Iran has constructively engaged on this issue over the course of talks.

<https://www.tehrantimes.com/news/468793/Credible-guarantees-vital-for-success-of-Vienna-talks>

Iranian commander: We build highly advanced military equipment

Tehran Times, January 04, 2022

Brigadier General Mohammad Hossein Dadras said on Wednesday that today

Iran has reached a degree of self-sufficiency that is able to produce technologically advanced arms. "We do not buy weapons from outside and we make the best ourselves," he added. Elsewhere in his remarks, the deputy commander of the Army said Iran is in a situation that it can respond to any military threat. The general was indirectly referring to the Zionist regime which has intensified military threats against Iran as talks are underway in Vienna to restore the 2015 nuclear deal, officially known as the Joint Comprehensive Plan of Action. The Army official said the complaints that Israel is making are because it does not have the power to face Iran militarily because it knows that if it receives a response from Iran, "it will not rise again."

<https://www.tehrantimes.com/news/469030/iranian-commander-We-build-highly-advanced-military-equipment>

I. Israel

Israel not bound by any nuclear deal with Iran, Bennett says

Reuters, January 10, 2022

Prime Minister Naftali Bennett said that Israel would not be bound by any nuclear deal with Iran and would continue to consider itself free to act "with no constraints" against its arch-foe if necessary. Indirect talks between Iran and the United States on salvaging the 2015 Iran nuclear deal resumed a week ago in Vienna. France's foreign minister said on Friday that progress had been made, although time is running out. "In regard to the nuclear talks in Vienna, we are definitely concerned ... Israel is not a party to the agreements," Bennett said in public remarks, in a briefing to a parliamentary committee. "Israel is not bound by what will be written in the agreements, if they are signed, and Israel will continue to maintain full freedom of action anywhere any time, with no constraints," he said.

<https://www.reuters.com/world/middle-east/israels-wont-be-bound-by-any-nuclear-deal-with-iran-bennett-says-2022-01-10/>

East Asia

J. North Korea

Analysis: N.Korea's 'hypersonic missile' tests raise military stakes in Asia

Reuters, January 14, 2022

Josh Smith

Even as debates swirl over their capability, a series of "hypersonic missiles" recently tested by nuclear-armed North Korea sparked sudden talk of preemptive strikes and arms races amid worry over the vulnerability of U.S. troops and their allies in Asia. North Korea kicked off the new year with three missile tests in the space of two weeks, sparking reactions from Washington not seen since Pyongyang stopped testing its longest-range missiles, which can strike the United States, in 2017. At least two of the latest tests were of what North Korea called "hypersonic missiles" while details on the third, launched, were not immediately available. Those hypersonic missiles, which have only regional reach, are not a threat to the continental United States. But the weapons - which can fly below defences and change course at high speed - represent a potential major upgrade in North Korea's striking power against its nearby adversaries, and experts say it is unclear how the U.S. and its Asian allies could counter that.

<https://www.reuters.com/world/asia-pacific/nkoreas-hypersonic-missile-tests-raise-military-stakes-asia-2022-01-14/>

N.Korea fires missiles, drawing both U.S. condemnation and appeal for talks

Josh Smith, Hyonhee Shin and David Brunnstrom

Reuters, January 14, 2022

North Korea fired at least two ballistic missiles on Friday, drawing both condemnation and an appeal for dialogue from a U.S. administration that has

imposed new sanctions over previous North Korean missile launches and is pushing for more. The third North Korean missile launch in less than two weeks and indignant statements by both sides raised the spectre of a return to 2017's days of "fire and fury" threats before a flurry of diplomacy that stalled and slipped back into a standoff.

<https://www.reuters.com/world/asia-pacific/nkorea-fires-two-missiles-warns-strong-action-over-us-sanctions-push-2022-01-14/>

North Korea tests railway-borne missile in latest launch amid rising tension with U.S.

Hyonhee Shin

Reuters, January 14, 2022

North Korea tested a railway-borne missile in its firing drills on Friday, state media KCNA said on Saturday, amid a U.S. push for fresh sanctions against the isolated state following its recent series of weapons tests. South Korea's Joint Chiefs of Staff said two short-range ballistic missiles (SRBMs) travelled about 430 km (267 miles) to a maximum altitude of 36 km (22 miles) after being launched eastward on the northwest coast of North Korea. The official KCNA news agency did not specify the missiles' range, or trajectory, but said a firing drill was held in North Pyongan Province to "check and judge the proficiency in the action procedures of the railway-borne regiment."

<https://www.reuters.com/world/asia-pacific/north-korea-used-railway-born-missile-fridays-test-kcna-2022-01-14/>

K. South Korea

S. Korea, Saudi Arabia agree to boost energy ties for low carbon economy

Korea Herald, January 06, 2022

South Korea and Saudi Arabia have vowed to boost cooperation in nuclear power and other energy fields for their transition to a low carbon economy, Seoul's industry ministry said Thursday. South Korea's Industry Minister Moon Sung-wook and

Saudi Arabia's Energy Minister Abdulaziz bin Salman reached their consensus at their meeting in the kingdom. Moon arrived in Saudi Arabia for a three-day stay at the Saudi minister's invitation. During the Wednesday meeting, Moon suggested enhanced ties not only in oil and other traditional energy sectors but also in new fields, such as nuclear power, renewable energy and hydrogen, and expressed the country's willingness to take part in a major nuclear power plant project in Saudi Arabia, according to the Ministry of Trade, Industry and Energy.

http://www.koreaherald.com/view.php?ud=20220106000565&ACE_SEARCH=1

Seoul diplomat meets negotiators of Iran nuclear talks in Vienna

Korea Herald, January 06, 2022

South Korea's vice foreign minister has held back-to-back talks with top negotiators of the five countries involved in Vienna-based talks aimed at reviving a 2015 Iranian nuclear deal, its foreign ministry said. Choi Jong-kun was in the Austrian capital for the talks as Seoul hopes the restoration of the Joint Comprehensive Plan of Action (JCPOA) would help address the thorny issue of Iranian assets frozen in South Korea under US sanctions. This week, Choi met with the US Special Envoy for Iran Robert Malley and Deputy Secretary-General of the European External Action Service (EEAS) Enrique Mora, who serves as the coordinator of the Vienna talks, as well as the representatives of France, Germany and Britain. At the meetings, Choi shared the view that the current round of negotiations has reached "a critical juncture" and called for efforts to achieve "positive progress," the ministry said in a press release.

http://www.koreaherald.com/view.php?ud=20220106000683&ACE_SEARCH=1

No first use for all

Korea Herald, January 09, 2022

Nuclear weapons are one of today's most critical international issues. We face rising

tension between nuclear-armed states such as the United States, the Russian Federation, and the People's Republic of China. From the border between Russia and Ukraine to the Taiwan Strait, growing military activity in those regions concerns the global community. Hence the recent joint statement by the five nuclear-armed states – China, France, Russia, United Kingdom, and the United States – gave us, the NPT-abiding non-nuclear-armed states, a credible assurance that the current military build-up would not end in total annihilation. I commend the decision of these five countries. However, the world needs a more robust security guarantee that ensures fundamental certainty about the usage of nuclear weapons: A No First Use policy by all nuclear-armed states.

http://www.koreaherald.com/view.php?ud=20220109000232&ACE_SEARCH=1

S. Korean, US nuclear envoys discuss N. Korea's latest missile launch

Korea Herald, January 11, 2022

Top nuclear envoys of South Korea and the United States held phone talks over North Korea's latest launch of a ballistic missile and stressed the importance of maintaining the allies' combined defense posture, according to Seoul's foreign ministry. Noh Kyu-duk, special representative for Korean Peninsula peace and security affairs, and his American counterpart, Sung Kim, discussed the matter, hours after the North test-fired the missile toward the East Sea in its second show of force this year. The two sides "emphasized the importance of maintaining a firm combined defense posture based on the robust South Korea-US alliance," the ministry said.

http://www.koreaherald.com/view.php?ud=20220111000838&ACE_SEARCH=1

Nuke reactor shuts down on mechanical malfunction

Korea Herald, January 13, 2022

A nuclear reactor automatically shut down Thursday after a coolant pump stopped working, but no radiation leak was found,

the operator of the country's nuclear plants said. The Reactor-5 at the Hanul Power Plant in Uljin, some 330 kilometers southeast of Seoul, was shut down at around 1:26 a.m., according to the state-run Korea Hydro & Nuclear Power Co. The Nuclear Safety and Security Commission said it is currently looking into the stoppage to find the exact cause of the automatic shutdown. The nuclear watchdog said the malfunction of a coolant pump appears to have caused the nuclear reactor to automatically shut down, adding that the radiation level is being maintained at usual levels.

http://www.koreaherald.com/view.php?ud=20220113000198&ACE_SEARCH=1

L. Japan

TEPCO slow to respond to growing crisis at Fukushima plant

Asahi Shimbun, January 02, 2022

Radioactive waste generated from treating highly contaminated water used to cool crippled reactors at the Fukushima No. 1 nuclear power plant has thrown up yet new nightmarish challenges in decommissioning the facility, a project that is supposed to be completed in 30 years but which looks increasingly doubtful. The continuous accumulation of radioactive slurry and other nasty substances, coupled with the problem of finding a safe way to dispose of melted nuclear fuel debris at reactors No. 1, No. 2 and No. 3, has plant operator Tokyo Electric Power Co. frantically scratching around for ideas. One problem is that storage containers for the tainted slurry degrade quickly, meaning that they constantly have to be replaced. Despite the urgency of the situation, little has been done to resolve the matter.

Fuel debris, a solidified mixture of nuclear fuel and structures inside the reactors melted as a consequence of the triple meltdown triggered by the 2011 earthquake and tsunami disaster has to be constantly cooled with water, which mixes with groundwater and rainwater rainwater that seep into the reactor

buildings, producing more new radioactive water. The contaminated water that accumulates is processed via an Advanced Liquid Processing System to remove most of radioactive materials. The ALPS is housed in a 17-meter-tall building situated close to the center of the plant site. Reporters from the Japan National Press Club were granted a rare opportunity in late November to visit the crippled facility to observe the process. The building houses a large grayish drum-like container designed especially to store radioactive slurry. The interior of each vessel is lined with polyethylene, while its double-walled exterior is reinforced with stainless steel.

<https://www.asahi.com/ajw/articles/14503708>

Australia, Japan sign defense pact as China concerns loom

AP, January 06, 2022

The leaders of Japan and Australia signed a “landmark” defense agreement Thursday that allows closer cooperation between their militaries and stands as a rebuke to China’s growing assertiveness in the Indo-Pacific region. Australian Prime Minister Scott Morrison and Japanese Prime Minister Fumio Kishida met in a virtual summit to sign the Reciprocal Access Agreement, the first such defense pact signed by Japan with any country other than the United States. The agreement follows more than a year of talks between Japan and Australia aimed at breaking down legal barriers to allow the troops of one country to enter the other for training and other purposes. “Japan is our closest partner in Asia as demonstrated by our special strategic partnership – Australia’s only such partnership,” Morrison said. “An equal partnership, shared trust between two great democracies committed to the rule of law, human rights, free trade and a free and open Indo-Pacific.”

<https://apnews.com/article/china-japan-asia-australia-scott-morrison-4fec98d23bb6cf16350e6d093ff147fc>

U.S., Japan hail stronger ties, including 2 new defense deals

AP, January 07, 2022

Seeking to deepen their defense cooperation, the United States and Japan will soon sign a new five-year agreement on sharing the cost of the American military presence in Japan, Secretary of State Antony Blinken said. Speaking at the outset of a virtual conference between the U.S. and Japanese foreign and defense ministers, Blinken said Tokyo and Washington also will sign a deal on collaborating more closely in research and development of defense-related technologies, including ways to counter threats from hypersonic weapons. The agreement on a new formula for sharing the cost of the American military presence in Japan ends a Trump-era dispute that had been a significant irritant in U.S.-Japan relations. Blinken said the new deal will enable greater investment in the readiness of both countries’ forces and improve their ability to operate together. Defense Secretary Lloyd Austin, who participated virtually from his home because he is recovering from a COVID-19 infection, said the U.S.-Japan alliance is increasingly important.

<https://apnews.com/article/coronavirus-pandemic-health-japan-united-states-north-korea-5a4232f54b5a3b796225da9efeb2d83e>

Six ‘swimming’ robots will check melted fuel at Fukushima plant

Asahi Shimbun, January 11, 2022

More than a decade after the Fukushima nuclear accident, officials of Tokyo Electric Power Co., the plant operator, still have no idea about the condition of the melted nuclear fuel in the No. 1 reactor. They hope to get a clearer picture through a study beginning Jan. 12 utilizing six submersible robots of what has to be dealt with and the sediment in trying to remove the highly radioactive material. “By learning about the details of the sediment,

we want to obtain information that will help us decide what equipment and procedures will be needed to remove the melted fuel," a TEPCO official said. The robots were jointly developed by Hitachi-GE Nuclear Energy Ltd. and the International Research Institute for Nuclear Decommissioning (IRID). The melting of the nuclear fuel in the No. 1 reactor at the Fukushima No. 1 nuclear power plant was the most severe of the three reactors where meltdowns occurred following the 2011 Great East Japan Earthquake and tsunami.

Much of the so-called nuclear debris is believed to have melted through the bottom of the pressure vessel and has likely accumulated in the basement of the reactor building. In 2017, a camera was inserted into the water collected in the containment vessel of the No. 1 reactor to check on the condition of the interior. However, no confirmation could be made of the debris because of the large amount of what appeared to be sand that covered the melted fuel. The six submersible robots will have different functions and be deployed in a designated order to photograph and measure the depth of the sediment and to determine if melted fuel lies under it. The first robot will install four rings on the interior wall of the containment vessel using magnets. Subsequent robots will navigate through the rings to avoid entangling the trailing cables transmitting electricity and signals.

<https://www.asahi.com/ajw/articles/14519632>

M. China

China's Tianwen-1 sends New Year blessings from Mars by releasing new images

Global Times, January 01, 2022

The CNSA released new images taken by the Tianwen-1 Mars probe on the first day of 2022, including one group picture of the orbiter with the Red Planet, Zhurong rover on Mars surface and the Mars North Pole glacier.

<https://www.globaltimes.cn/page/202201/1243874.shtml>

China's complaints over Elon Musk's satellites 'highlight need for better communications to prevent accidents in space'

Liu Zhen

South China Morning Post, January 02, 2022

China and the United States have been urged to improve communications with each other and with private companies over space matters to reduce the risk of accidents. The call follows China's complaint to the United Nations that its Tiangong space station had two near misses with satellites from Elon Musk's company SpaceX last year.

<https://www.scmp.com/news/china/military/article/3161854/chinas-complaints-over-elon-musks-satellites-highlight-need>

China shows global responsibility on nukes

*Liu Xuanzun, Fan Anqi and Bai Yunyi
Global Times, January 04, 2022*

China had pushed forward a joint statement by the leaders of the five nuclear weapon states on preventing nuclear war and avoiding arms races issued on Monday by urging the others to join the reaffirmation that a nuclear war cannot be won and shall not be fought, after the process under the framework of the Non-Proliferation Treaty (NPT) remained in a state of inaction for a couple of years and despite resistance from the former Trump administration, a senior Chinese diplomat stated.

<https://www.globaltimes.cn/page/202201/1245100.shtml>

China will modernize, not drastically expand, its nuclear arsenal: senior diplomat

*Liu Xuanzun, Fan Anqi and Bai Yunyi
Global Times, January 04, 2022*

China has no plan to drastically expand its nuclear arsenal but the country will continue to modernize it under the

changing security environment, a senior Chinese diplomat said in response to recent foreign reports that have been speculating and hyping China's nuclear weapon development, including those on the alleged missile silo buildups in Northwest China and the alleged hypersonic tests. When asked about the topic at a press briefing introducing the joint statement on preventing nuclear war and avoiding arms races issued on Monday by the leaders of five Nuclear-Weapon States, Fu Cong, Director General of the Arms Control Department at China's Ministry of Foreign Affairs, said that China is not dramatically expanding its nuclear capabilities, since China maintains its nuclear capabilities at the minimum level that is required for national defense.

<https://www.globaltimes.cn/page/202201/1245088.shtml>

Xi signs mobilization order for military training

Xinhua, January 04, 2021

Chinese President Xi Jinping January 04 signed a mobilization order for the training of the armed forces, the first order of the Central Military Commission (CMC) in 2022. Signed by Xi, also general secretary of the Communist Party of China Central Committee and chairman of the CMC, the order declared the start of military training for the year. The entire rank and file of the armed forces are required to resolutely implement the plans and instructions of the Party leadership and the CMC, according to the order, adding that the changing landscape of national security and combat circumstances must be accurately understood. The armed forces must closely follow the evolution of technology, warfare and rivals, redouble their efforts to better combine training with combat operations, and strengthen systematic training and the use of technologies to develop an elite force that is capable of fighting and winning wars, the order read.

<http://www.xinhuanet.com/english/20220104/0393e0b827af4fe8ad8e03d9cb8e6886/c.html>

N. World/Misc.

World's biggest uranium miner says it is unaffected by Kazakh turmoil

Mariya Gordeyeva and Olzhas Auyezov

Reuters, January 07, 2022

Kazatomprom (KZAP.KZ), the world's biggest uranium producer, said on Thursday it was operating normally with no impact on output or exports despite unrest in Kazakhstan. Uranium prices have risen after unrest in Kazakhstan which was spurred initially by protests against fuel price hikes. Spot prices hit \$45.50 per pound, the highest since Nov. 30, according to a Platts assessment. But the central Asian country's political turmoil does not seem to have so far affected key industries.

<https://www.reuters.com/markets/europe/worlds-biggest-uranium-miner-says-unaffected-by-kazakh-turmoil-2022-01-06/>

Transport disruptions the wild card for Kazakh uranium shipments

Pratima Desai

Reuters, January 07, 2022

Protests in Kazakhstan have not hit the country's uranium output so far, but if the crisis escalates and transport is disrupted, shipments of the fuel used to generate nuclear power from the dominant producer will be at risk. Days of violent unrest against a fuel price hike have prompted the government to declare a state of emergency in Kazakhstan, with soldiers shooting at protesters in its biggest city Almaty.

<https://www.reuters.com/markets/commodities/transport-disruptions-wild-card-kazakh-uranium-shipments-2022-01-07/>

South Africa's Eskom to shut down units of nuclear plant for refuelling

Reuters, January 15, 2022

South Africa's state power provider Eskom will from Monday carry out a staggered shutdown of both units of its Koeberg nuclear power station for scheduled refuelling and maintenance, putting an already overburdened power system under additional strain. In a statement, Eskom said it would take Unit 2 offline from Monday for five months, then do the same with Unit 1 for a similar duration afterwards. Each unit generates 920 megawatts (MW).

<https://www.reuters.com/business/energy/south-africas-eskom-shut-down-units-nuclear-plant-refuelling-2022-01-15/>

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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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