

Nuclear, Missile & Space Digest

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A Fortnightly Newsletter from the MP-IDSA

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A. India

India, Pakistan exchange list of nuclear installations under 1988 bilateral pact

Mint, January 1, 2024

India and Pakistan on Monday exchanged a list of their nuclear installations under a bilateral pact signed in 1988 and came into force in 1991 that prohibits the two countries from attacking each other's atomic facilities. The list of nuclear installations and facilities, covered under the provisions of the Agreement on the Prohibition of Attack Against Nuclear Installations and Facilities, were simultaneously exchanged in New Delhi and Islamabad through diplomatic channels, the Ministry of External Affairs (MEA) said. "India and Pakistan today exchanged, through diplomatic channels simultaneously in New Delhi and Islamabad, the list of nuclear installations and facilities, covered under the agreement on the prohibition of attack against nuclear installations and facilities between India and Pakistan," the MEA said.

<https://www.livemint.com/news/india/india-pakistan-exchange-list-of-nuclear-installations-under-1988-bilateral-pact-11704107726908.html>

PM Modi dedicates DFR plant in Tamil Nadu to further atomic research

Business Standard, January 3, 2023

Prime Minister Narendra Modi dedicated the Demonstration Fast Reactor Fuel Reprocessing Plant (DFRP) at the Indira Gandhi Centre for Atomic Research in Kalpakkam in Chengalpattu district on Tuesday.

Built at a cost of about Rs 400 crore, this groundbreaking facility has the unique distinction of being the world's only industrial-scale plant capable of handling both carbide and oxide spent fuels from fast reactors, a release stated. DFRP houses

several indigenously designed and developed novel equipment. A testament to Atma Nirbhar Bharat, the DFRP symbolises the successful collaboration between government R & D infrastructure and Indian industries, leading to a crucial stepping stone for the next generation of breeder and fast reactors, the release said.

https://www.business-standard.com/india-news/pm-modi-dedicates-dfr-plant-in-tamil-nadu-to-further-atomic-research-124010300064_1.html

Cabinet approves Memorandum of Understanding between Indian Space Research Organization (ISRO) and Mauritius Research and Innovation Council (MRIC) concerning cooperation on the development of a Joint Small Satellite

PIB, January 5, 2024

The Union Cabinet chaired by Hon'ble Prime Minister Shri Narendra Modi was apprised of a Memorandum of Understanding signed at Port Louis, Mauritius on November 01, 2023 between Indian Space Research Organization (ISRO) and Mauritius Research and Innovation Council (MRIC) under the aegis of the Ministry of Information Technology, Communication, and Innovation of the Republic of Mauritius, concerning cooperation on the development of a Joint Small Satellite. MoU will help to establish a framework for cooperation between ISRO and MRIC on the development of a joint satellite as well as for cooperation on the use of the MRIC's Ground Station. Some of the subsystems for the joint satellite will be taken up through the participation of Indian industries and would benefit the industry.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1993364>

This new nuclear fuel can guarantee India's green energy transition

Hindu Businessline, January 10, 2024

An invention by an American company, set up by a person of Indian origin, is making waves in the nuclear establishment of North America. If adopted in India, it can guarantee green energy security for the subcontinent by fast-tracking the use of Thorium in nuclear reactors. India has the world's largest reserves of Thorium, estimated at 1.07 million tonnes, enough to last over a century. If India uses this Thorium, it can then produce enough green energy and easily turn net-zero by its target date of 2070. However, Thorium is a fertile material and not a fissile material. This means, it must be paired with Uranium-235 or Plutonium-239 to be used as fuel in a reactor. As neutrons from these fissile materials bombard Thorium, it mutates into Uranium-233, which is also a fissile material.

<https://www.thehindubusinessline.com/business-tech/this-new-nuclear-fuel-can-guarantee-indias-green-energy-transition/article67716078.ece>

DRDO conducts successful flight-test of New Generation AKASH missile off Odisha coast

PIB, January 12, 2024

Defence Research and Development Organisation (DRDO) conducted a successful flight-test of the New Generation AKASH (AKASH-NG) missile from the Integrated Test Range (ITR), Chandipur off the coast of Odisha at 1030 hrs on January 12, 2024. The flight-test was conducted against a high-speed unmanned aerial target at very low altitude. During the flight-test, the target was successfully intercepted by the weapon system and destroyed. It has validated the functioning of the complete weapon system consisting of the missile with indigenously developed Radio Frequency Seeker, Launcher, Multi-Function Radar and Command, Control & Communication system.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1995445>

Radioactivity concentrations in ecology around India's nuclear power plants minimal, below international limits: BARC study

Times of India, January 15, 2024

In what could reinforce India's commitment to advance nuclear power programme safely as part of its long-term goal to reduce reliance on fossil fuels, a group of scientists from the Bhabha Atomic Research Centre (BARC) has found that the radioactivity concentrations in air, water and land around the country's existing nuclear power plants are not only minimal but also below international discharge limits. Published last week in journal ScienceDirect, the findings acknowledge that though nuclear power plants release some radioactivity into the environment through various pathways and in different forms, these discharges are carefully managed through planned programmes of dilution and dispersion, adhering to strict radiological and environmental regulatory regimes.

<https://timesofindia.indiatimes.com/india/radioactivity-concentrations-in-ecology-around-indias-nuclear-power-plants-minimal-below-international-limits-barc-study/articleshow/106865841.cms>

B. Russia

Future Arktur nuclear sub to carry strategic weapons, unmanned craft

TASS, January 10, 2024

The fifth-generation Arktur nuclear submarine of the Rubin Design Bureau will have smaller signature and carry strategic weapons and various unmanned craft, the United Shipbuilding Corporation (USC) said.

"The multifunctional project is vital for yet unknown conditions of the second half of the century. The Arktur can carry strategic weapons and various unmanned craft. Small and medium craft are kept in the ship's silos while big ones are kept overboard. The underwater robots will

help the Arktur better comprehend the surrounding situation, earlier detect the adversary and escape its attacks,” it said.

<https://tass.com/defense/1730385>

Russia reportedly postpones return of Irkutsk nuclear submarine till 2025

TASS, January 10, 2024

The return of the Irkutsk nuclear submarine to the Navy after an overhaul and upgrade has again been postponed. The return is now expected in 2025, a source close to the military-industrial complex told TASS.

“The upgraded Irkutsk nuclear submarine with increased firepower will likely return to the Pacific fleet in late 2025,” the source said. The Irkutsk had to rejoin the Navy in 2017. The deadline was then postponed to 2019, 2022 and 2023.

TASS has no official confirmation of the report.

<https://tass.com/defense/1730413>

Sevmash to float Knyaz Pozharsky strategic submarine in late January

TASS, January 10, 2024

Sevmash Shipyard will float the Knyaz Pozharsky strategic submarine of Borey-A-class project 955A in late January, a shipbuilding source told TASS.

“The eighth submarine of the Borey family will leave the Sevmash slipway and float for final construction in the end of January,” the source said. TASS has no official confirmation of the report.

In December, Defense Minister Sergey Shoigu set the task to deliver the Knyaz Pozharsky to the Northern fleet in 2024. The submarine has to test fire a Bulava missile at Kura range in Kamchatka.

<https://tass.com/defense/1730425>

Kiev’s attempts to destroy Russian launchers could prompt nuclear measures – Medvedev

TASS, January 11, 2024

Ukraine’s attempts to destroy Russia’s missile launchers with long-range Western missiles could potentially trigger a nuclear response, the deputy chairman of Russia’s Security Council, Dmitry Medvedev, said on his Telegram channel. If Kiev is to be believed, he warned, “the best method of fighting Russia is to destroy launchers across the country’s territory with long-range missiles provided by the West.” “What does this mean? Only one thing. They [the Ukrainian authorities] will run the risk of activating paragraph 19 of the basic principles of Russia’s state policy in the field of nuclear deterrence: aggression against Russia with the use of conventional weapons, when the very existence of the state is threatened,” Medvedev wrote.

<https://tass.com/politics/1731243>

C. China

China’s first nuclear power plant sets new record

Zheng Yibing

CGTN, January 1, 2024

The Qinshan Nuclear Power Plant, China’s first indigenous nuclear power plant set a record high in 2023 of 96.8 percent in its unit capability factor (UCF), based on statistics provided by the World Association of Nuclear Operators, known as WANO. The power plant is located in Haiyan

County, east China’s Zhejiang Province and is owned by China National Nuclear Corporation (CNNC). The feat is achieved by factoring in overall performance across nine power units in the plant, according to the company. The UCF is a key indicator WANO uses to evaluate the performance

and management level of nuclear power plants. “

<https://news.cgtn.com/news/2024-01-01/China-s-first-nuclear-power-plant-sets-new-record1q0UI0WeYPLi/p.html>

Chinese military rebuts US military's smear on aircraft encounter

China Military Online, January 1, 2024

The Chinese PLA Southern Theater Command released a written statement on Saturday night to rebut the US military's recent smear, saying that the US deliberately misled the public opinion, distorted fact, blamed the innocent and attempted to fool the international community. The US Indo-Pacific Command recently claimed in a statement that a PLAN J-11 fighter jet performed a so-called “unsafe maneuver” against a USAF RC-135 plane. Air Force Senior Colonel Tian Junli, spokesperson for the Chinese PLA Southern Theater Command, said in a statement in response to media that the US military's statement ignores facts and is nothing but slander and speculation.

http://english.pladaily.com.cn/view/2023-01/01/content_10208941.htm

China ramping up nuclear energy as U.S. turns to wind and solar

Susan Ferrechio

The Washington Times, January 2, 2024

The United States is closing older nuclear power plants and taking baby steps toward building new ones while China, the world's No. 2 economy, aggressively ramps up its nuclear power inventory and has added 37 reactors in the past decade. China's capacity to generate electricity from nuclear power plants is on track to overtake France in 2025 and will be on par with the U.S. in 2030. “China's nuclear rise is driven by demand,” Francois Morin, China director at the World Nuclear Association, told The Washington Times.

<https://www.washingtontimes.com/news/2024/jan/2/china-ramping-up-nuclear-energy-as-usturns-to-win/>

China approves construction of four new reactors

China National Nuclear Corporation (CNNC), January 3, 2024

At the meeting of the Standing Committee of the State Council, chaired by Chinese Premier Li Qiang, approval was granted for units 3 and 4 at China General Nuclear's (CGN's) existing Taipingling nuclear power plant in Guangdong province, as well as units 1 and 2 at China National Nuclear Corporation's (CNNC's) new Jinqimen nuclear power plant in Zhejiang province. The Taipingling plant will eventually have six Hualong One reactors. The construction of the first and second units began in 2019 and 2020, respectively. Unit 1 is scheduled to start up in 2025, with unit 2 following in 2026.

https://subsites.chinadaily.com.cn/cnnc/2024-01/03/c_953469.htm

China unveils new images of its next-generation aircraft carrier

Reuters, January 3, 2024

Chinese state media unveiled new images of China's most advanced aircraft carrier yet, including next generation launch tracks that can catapult a wider range of aircraft from its deck. First shown to the public in June 2022, the Fujian was entirely designed and built domestically. Yet to conduct its first sea trials, the aircraft carrier is larger and technologically more advanced than the Shandong, commissioned in 2019, and the Liaoning, which China bought second-hand from Ukraine in 1998 and refitted domestically. “In the new year, we will seize every minute, work with determination, and strive for combat readiness as soon as possible,” state television cited a Fujian officer as saying.

The Fujian has been conducting tests including mooring tests before its sea trials, which some observers expected to have taken place by 2023. The carrier started launch tests for its electromagnetic catapult system in November, according

to state-controlled Chinese newspaper Global Times.

<https://www.reuters.com/world/china/china-unveils-new-images-its-next-generation-aircraftcarrier-2024-01-03/>

China's space warfare plan advances killer missiles capable of disabling U.S. satellites

Bill Gertz

The Washington Times, January 4, 2024

China's plans for space warfare include cyberattacks and electronic jamming to disrupt and disable U.S. satellite systems and, in the future, small robot satellites to grab or crush U.S. military space sensors, according to a senior U.S. intelligence official report. China's three types of anti-satellite missiles capable of blasting satellites at all orbits are under the control of the Chinese Communist Party Central Military Commission, headed by President Xi Jinping, and represent a deterrent force, said Kristin Burke, deputy national intelligence officer for space at the National Intelligence Council, a senior analysis unit.

<https://www.washingtontimes.com/news/2024/jan/4/china-space-warfare-includes-cyberattacksjamming-/>

US intelligence shows flawed China missiles led Xi to purge army

Peter Martin and Jennifer Jacobs

Bloomberg, January 6, 2024

US intelligence indicates that President Xi Jinping's sweeping military purge came after it emerged that widespread corruption undermined his efforts to modernize the armed forces and raised questions about China's ability to fight a war, according to people familiar with the assessments. The corruption inside China's Rocket Force and throughout the nation's defence industrial base is so extensive that US officials now believe Xi is less likely to contemplate major military action in the coming years than would otherwise have been the case,

according to the people, who asked not to be named discussing intelligence.

<https://www.bloomberg.com/news/articles/2024-01-06/us-intelligence-shows-flawed-chinamissiles-led-xi-jinping-to-purge-military>

U.S. rushes to revive nuclear weapons industry in the face of China's expansion and global tensions

Tetsuya Abe

Nikkei Asia, January 7, 2024

While China is bolstering its nuclear capabilities, the U.S. — the first country to produce atomic weapons, in 1945, and the world's top economic and military superpower — is facing a deeply worrying situation. That is underscored by a site in the south of the nation that at first glance looks like a desolate chemical plant. But yellow signboards here and there reveal what it really is. One of them reads, "This facility is under the supervision of the Atomic Weapons and Special Nuclear Materials Rewards Act."

<https://asia.nikkei.com/Politics/Defense/U.S.-rushes-to-revive-nuclear-weapons-industry-asglobal-tensions-mount>

The last atomic Waltz: China's nuclear expansion and the persisting relevance of the theory of the nuclear revolution

Henrik Stålhane Hiim

Contemporary Security Policy, Taylor & Francis Online, January 8, 2024

China's nuclear expansion has fuelled debates about its nuclear strategy. There is still little evidence to suggest that China's strategy has changed. The expansion can best be explained as an effort to bolster China's second-strike capability, and it is primarily driven by increasing concerns about US missile defence as well as nuclear and conventional counterforce weapons. This is in line with assumptions of the nuclear revolution theory, which stresses

the importance of secure second-strike forces. So far, China's nuclear modernization does not align with the "delicate nuclear balance" school, which sees strong incentives for states to adopt competitive nuclear policies and attempt to obtain strategic superiority.

<https://www.tandfonline.com/doi/full/10.1080/13523260.2023.2291258?src=>

The conversation with Dr. Francesca Giovannini about China and East Asia in the Global Nuclear Order

Mercy A. Kuo

The Diplomat, January 8, 2024

China's advancements in space and artificial intelligence enhance its nuclear capabilities through improved delivery systems, advanced surveillance and reconnaissance infrastructure, and robust defensive technologies. These technologies will act as important enabling systems for China's nuclear forces along many dimensions. Yet, while critically important, these technologies can also be extraordinarily destabilizing. President Xi's administration has shown an interest in cooperating with the United States to regulate AI in the nuclear domain. I think the U.S. should take up this opportunity and work earnestly with China to achieve a verifiable agreement on the safe use of AI in military applications.

<https://thediplomat.com/2024/01/china-and-east-asia-in-the-global-nuclear-order/>

China launches fusion consortium to build "artificial sun"

Nuclear Newswire, January 9, 2024

The consortium China Fusion Energy Inc. is being led by the China National Nuclear Corporation (CNNC), which has been conducting research and development, construction, production, and operation activities regarding nuclear energy, the nuclear fuel cycle, nuclear applications, and environmental protection for about 25 years. The consortium was established to pool national resources and spur the development of fusion technology in China, including through initial R&D activities in

the areas of high-temperature superconducting magnets, large-capacity energy storage, and tritium production. There are 25 primarily government-owned companies and research institutes involved that have expertise in energy, construction, and other relevant fields.

<https://www.ans.org/news/article-5668/china-launches-fusion-consortium-to-build-artificial-sun/>

From hypersonic missiles to undersea drones, the PLA is making leaps

Mint, January 10, 2024

Xi Jinping learned a lot from his first job. As secretary to Geng Biao, a vice-premier and defence minister, from 1979 to 1982, he handled sensitive documents and joined top-level conclaves. More importantly, Mr Xi witnessed firsthand the parlous state of the PLA. It had just been fought to a stalemate by Vietnam. It was still using old Soviet weapons technology, some of it dating to the second world war. Four decades on, Mr Xi leads a country that can design and produce almost all of the modern weaponry that it needs. His mostly state-run defence industry manufactures nuclear powered submarines, stealth fighters and a formidable arsenal of missiles. The Pentagon says that the PLA has deployed a medium-range hypersonic missile that can fly on the atmosphere's edge and change course to evade defences.

<https://www.livemint.com/specials/from-hypersonic-missiles-to-undersea-drones-the-pla-is-making-leaps-11704878874121.html>

What did the DOD know about Chinese missiles in the latest PRC nuclear capabilities report?

Jon Wolfsthal

Federation of American Scientists, January 10, 2024

In early January 2024, Bloomberg published a press report suggesting U.S. intelligence assessments have evidence that the reliability of China's new nuclear missiles may be undermined by corruption within China's People's Liberation Army

Rocket Forces. These assessments cited examples of significant flaws in China's missile program, including missile silo lids that may not be fully operational and missile silo fields – some of which were originally discovered by FAS researchers – that may have stages or components filled with water instead of fuel. If true, these flaws would compromise missile operations, calling into question China's nuclear force readiness and overall capabilities.

<https://fas.org/publication/dod-prc-silos-water-know/>

The US reportedly believes China fills missiles with water instead of fuel. Is that plausible?

Justin Ong

Channel News Asia, January 11, 2024

Missiles filled with water and soldiers using rocket fuel for hotpot - these are alleged examples of the extent of corruption in China's military, according to recent reports. Citing unnamed individuals said to be familiar with US intelligence, a Bloomberg article of January 6 also linked such rampant graft to an extensive purge of senior Chinese officers in late 2023. Military experts and China watchers CNA spoke to stressed that the US assessments were scant on detail and could not be verified - something the Bloomberg report itself acknowledged. The PLA's Rocket Force does operate a combination of conventional and nuclear; solid- and liquid-fuelled missiles, said Dr James Char, a research fellow at Singapore's S Rajaratnam School of International Studies (RSIS) think-tank

<https://www.channelnewsasia.com/world/china-missiles-water-fuel-cna-explains-us-intelligencecorruption-pla-4040281>

D. Europe

Europe will catch up with US in supporting nuclear energy revival

Balkan Green Energy News, January 5, 2024

Director General of the World Nuclear Association Sama Bilbao y León is urging decision makers to convince investors that

nuclear assets are investable, including the entire supply chain and the segment of small modular reactors. In an interview with Balkan Green Energy News, she expressed optimism regarding the efforts in Europe to support a new wave of nuclear energy investment, saying they would catch up with the measures underway in the United States and Canada.

Governments and companies committed at the United Nations Climate Change Conference COP28 to triple nuclear energy capacity by mid-century, formalizing the launch of the sector's revival. Investments in Europe have mostly slowed over the past few decades, but the wheels were put in motion when in 2021 the European Union included nuclear energy in its green taxonomy.

<https://balkangreenenergynews.com/europe-will-catch-up-with-us-in-supporting-nuclear-energy-revival/>

France to build more new generation nuclear reactors to reach green targets

RFI, January 7, 2024

A draft law set to be presented soon recognises that "we will need nuclear power beyond the six first European Pressurised Reactors" (EPRs) announced by President Emmanuel Macron in early 2022, Agnes Pannier-Runacher told Sunday's edition of weekly newspaper *Tribune Dimanche*.

The bill will include a further eight plants that had until now been discussed as an "option" by the government, Pannier-Runacher said.

By contrast, the text would not include any targets for renewable energy generation by 2030, remaining "technologically neutral", she added.

<https://www.rfi.fr/en/france/20240107-france-to-build-more-new-generation-nuclear-reactors>

UK invests in high-tech nuclear fuel to push Putin out of global energy market

U.K. Government, January 7, 2024

The UK will become the first country in Europe to launch a high-tech HALEU nuclear fuel programme, strengthening supply for new nuclear projects and driving Putin further out of global energy markets.

The landmark £300 million investment is part of plans to help deliver up to 24GW of clean, reliable nuclear power by 2050 - a quarter of the UK's electricity needs.

The government funding will support domestic production of high-assay low-enriched uranium (HALEU) - the specialist fuel required to power the next generation of nuclear reactors. Most advanced reactors require this fuel that is currently only commercially produced in Russia.

<https://www.gov.uk/government/news/uk-invests-in-high-tech-nuclear-fuel-to-push-putin-out-of-global-energy-market>

France sees potential for 14 new nuclear reactors

Power Technology, January 8, 2024

France may need to build more than 14 new nuclear power plants, more than the six currently planned, if the nation is to meet its energy transition goal of reducing fossil fuel dependence from 60% to 40% by 2035.

Energy Transition Minister Agnes Pannier-Runacher stressed that nuclear will play an increasingly vital role in France's energy mix. Speaking to La Tribune Dimanche just a few weeks before parliament reveals a bill relating to energy sovereignty, Pannier-Runacher said: "We need nuclear power beyond the first six EPRs [European Pressurised Reactors] since the existing (nuclear) park will not be eternal."

This new energy strategy will be debated in parliament from late January and must be codified into law.

<https://www.power-technology.com/news/france-may-build-14-new-nuclear-reactors/>

France drops renewables targets, prioritises nuclear in new energy bill

France 24, January 9, 2024

France, like other EU countries, aims to achieve carbon neutrality in 2050.

The proposed text, which is slated to go before the cabinet early next month and then be submitted to lawmakers, reaffirms France's commitment to nuclear power to ensure "energy sovereignty".

The country became a leader in nuclear power generation after the 1973 oil crisis, building over 50 such power plants that produced around two-thirds of the country's electricity.

But those reactors are ageing and France has yet to bring the first of a new generation of nuclear power plants online.

<https://www.france24.com/en/france/20240109-france-drops-renewables-targets-prioritises-nuclear-in-new-energy-bill>

France, Czechia defy EU sceptics on nuclear power

Euractiv, January 10, 2024

France and Czechia reiterated calls on Tuesday (9 January) for the European Commission to put nuclear power on an equal footing with renewable energies in all EU policies, putting traditional nuclear sceptic countries on the defensive.

On Tuesday (9 January), amid a major government reshuffle, French Energy Minister Agnès Pannier-Runacher was in Prague to promote nuclear collaboration.

"We will bring European energy policy to a completely new level," declared Czechia's Energy Minister, Jozef Síkela.

Speaking alongside his French colleague, Síkela reiterated the importance of nuclear's role in the "decarbonisation process - not only for the Czech Republic and France but for all of Europe."

<https://www.euractiv.com/section/energy-environment/news/france-czechia-defy-eu-sceptics-on-nuclear-power/>

Drop in nuclear power production in 2022

Eurostat, January 12, 2024

In 2022, 13 EU countries with nuclear electricity production generated 609 255 gigawatt hours (GWh) of nuclear electricity (-16.7% compared with 2021). This is the lowest level registered in the period from 1990, the first year for which comparable data are available for all EU countries. Nevertheless, nuclear power plants accounted for over a fifth (21.8%) of the total electricity production in the EU. The decrease is largely attributable to reactor maintenance and repairs in the EU's largest producer of nuclear power – France. In 2022, French nuclear power plants produced 84 630 GWh less electricity (-22%) than in 2021. Additionally, on the last day of 2021 Germany permanently shut down three of its reactors, halving its nuclear power production (from 69 130 GWh in 2021 to 34 709 GWh in 2022).

<https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240112-1>

E. United States of America

USS Dwight D. Eisenhower nuclear aircraft carrier enters Red Sea - report

I24 News, January 6, 2024

An American nuclear-powered aircraft carrier USS Dwight D. Eisenhower is in the Red Sea, U.S. Naval Institute reported on Friday. The deployment is said to be a part of Washington's effort to prevent the Iran-backed Houthis' attack on vessels in the area.

"USS Dwight D. Eisenhower (CVN-69), the flagship of the Dwight D. Eisenhower Carrier Strike Group, is in the Red Sea as part of U.S. efforts to prevent Houthi attacks on merchant ships, according to USNI News Fleet and Marine Tracker," said U.S. Naval Institute. Meanwhile, USS Gerald R. Ford is said to have headed back to the U.S. via the Atlantic as it withdrew from the Mediterranean. Earlier on Monday, the U.S. military was reported to bring its largest

aircraft carrier strike group (CSG) back to its base in the state of Virginia.

<https://www.i24news.tv/en/news/middle-east/1704521054-uss-dwight-d-eisenhower-aircraft-carrier-enters-red-sea-report>

US struggles to free itself from Russian enriched uranium supplies

Bellona, January 8, 2024

As the past year drew to a close, the US House of Representatives passed legislation that would ban the purchase of enriched Russian uranium for use in American nuclear reactors – a measure meant to hobble Rosatom, Russia's state nuclear corporation, which is actively participating in Moscow's invasion of Ukraine.

The Prohibiting Russian Uranium Imports Act, which was approved by voice vote, would bar Russian uranium imports 90 days after enactment while allowing a temporary waiver until January 2028. The bill needs to be passed by the Senate and then signed by President Joe Biden to become law, though the timeline for this remains unclear.

<https://bellona.org/news/nuclear-issues/2024-01-us-struggles-to-free-itself-from-russian-enriched-uranium-supplies>

Congress Endorses New Nuclear Weapon

Arms Control Association, January 2024

Congress authorized \$260 million for a new nuclear-armed sea-launched cruise missile (SLCM) for fiscal year 2024, despite the Biden administration's clear desire not to pursue the weapon's development. The administration did not request any funding for the nuclear SLCM in 2023 or 2024 because it assessed that the weapon has only "marginal utility" and would "impede investment in other priorities." (See ACT, May and November 2023.) But for the second consecutive year, Congress overrode the Pentagon's decision due to a majority of lawmakers viewing the SLCM

as critical in the current nuclear environment.

The fiscal year 2024 National Defense Authorization Act (NDAA) authorizes \$190 million for the missile and \$70 million for its associated warhead.

<https://www.armscontrol.org/act/2024-01/news/congress-endorses-new-nuclear-weapon>

US seeks to jump-start production of higher-energy uranium now made in Russia

Reuters, January 10, 2024

The U.S. is seeking bids from contractors to help establish a domestic supply of a uranium fuel enriched to higher levels for use in a next generation of reactors, a fuel currently only available in commercial levels from Russia, the Department of Energy said on Tuesday.

The DOE is seeking contracts for a maximum of 10 years from enrichment service companies to produce so-called high assay low enriched, or HALEU, uranium fuel that is enriched up to 20%, compared with traditional uranium fuel used in today's reactors of about 5%. The department has about \$500 million in funding for HALEU production from the 2022 Inflation Reduction Act, and sought proposals late last year for additional HALEU production services. The program could be expanded in coming years, depending on congressional appropriations.

<https://www.reuters.com/world/us/us-seeks-jump-start-production-higher-energy-uranium-now-made-russia-2024-01-09/>

Uranium Miners Surge on \$500 Million US Enrichment Push

Bloomberg, January 10, 2024

Shares in uranium miners jumped globally after the US said it's soliciting bids to boost domestic production of nuclear fuel in an effort to bolster national energy security.

The Energy Department is requesting proposals from US companies to produce a type of fuel known as high-assay low-

enriched uranium, or HALEU, it said Tuesday. It plans to invest as much as \$500 million in the projects and other ventures to convert HALEU into chemical precursors for nuclear fuels.

<https://www.bloomberg.com/news/articles/2024-01-10/uranium-miners-surge-on-500-million-us-enrichment-push>

US Navy Doubles Down On Carrier Capability

Naval News, January 14, 2024

The US Navy is ramping up delivery of its new Ford-class nuclear-powered aircraft carriers just as there is demonstrable increased strategic and operational need for the capability an aircraft carrier provides, the Executive Director for the USN's Program Executive Office (PEO) Carriers told the Surface Navy Association annual symposium in Arlington, Virginia. Justin Meyer's remarks at the event also underlined the benefits for the United States of the US Navy buying, building, and operating the carriers in 'twos'. "The demand for aircraft carriers has never been greater," "Recently, we've had both USS Carl Vinson and USS Ronald Reagan out West, as well as USS Gerald R Ford and USS Dwight D Eisenhower operating in 'dual-carrier' operations in the Eastern Mediterranean." Justin Meyer, Executive Director for the US Navy's Program Executive Office.

<https://www.navalnews.com/event-news/sna-2024/2024/01/us-navy-doubles-down-on-carrier-capability/>

West Asia

F. Iran

Iran boosts drone power amidst growing threats

Tehran Times, January 6, 2024

Iran's Air Defense Force Commander, Brigadier General Alireza Sabahifard, emphasizes the expanding capabilities of Iranian unmanned aerial vehicles (UAVs) in response to growing threats. He attributes this progress to domestic

technological advancements and underscores the crucial role of public support in countering foreign plots. General Sabahifard condemns a terrorist attack in Kerman, characterizing it as a desperate act by adversaries. He highlights the superiority of Iran's indigenous drones in countering aerial dominance, stating that advancements align with evolving threats and benefit from progress in metallurgy, fiberglass, and composite materials.

<https://www.tehrantimes.com/news/493370/Iran-boosts-drone-power-amidst-growing-threats>

Iran's Defense Ministry sees impressive increase in sales

Tehran Times, January 8, 2024

Iran's Defense Minister, Brigadier General Mohammad Reza Ashtiani, announced a significant surge in sales over the past two years, with sales more than tripling. While specific products were not disclosed, he mentioned that countries countering terrorism and drug trafficking are enthusiastic buyers of Iranian-made equipment. The defense ministry showcased homegrown military systems at the International Military Forum ARMY-2023 in Russia, attracting attention. Over the past three decades, Iran has invented heavily in developing advanced weapons and defense systems, with interest from at least 30 countries across Asia, Africa, Europe, and South America.

<https://www.tehrantimes.com/news/493471/Iran-s-Defense-Military-sees-impressive-increase-in-sales>

Iran's Revolutionary Guard Navy Unveils News Warship

Israel Defense, January 9, 2024

Iran's Revolutionary Guard Navy showcased its latest military advancements in a ceremony at Bandar Abbas. The newly revealed corvette, named Abu Mahdi al-Muhandis, features a catamaran design, boasting advanced radar-evading technologies, a 14-day naval endurance, and an impressive 2,000 nautical-mile radius. The vessel, described as a "mobile maritime

city" by Rear Admiral Alireza Tangsiri, is equipped with various weapon systems, including 30mm and 20mm cannons, lightweight torpedoes, and six box launchers potentially housing C802 anti-ship missiles. The unveiling pays tribute to the deputy head of Iraq's Popular Mobilization Units, assassinated in a 2020 US drone strike alongside Quds Force commander Quasem Suleimani.

<https://www.israeldefense.co.il/en/node/60877>

Iranian Army to unveil new drone: general

Tehran Times, January 11, 2024

Iranian Army's Air Defense to unveil a news UAV soon, announces Deputy Commander General Mohammad Yousefi Khoshqalb. Highlights include successful deployment of Karrar UAV with Majid missile and ongoing advancements in drone capabilities, spanning reconnaissance to combat operations.

<https://www.tehrantimes.com/news/492438/Iranian-Army-to-unveil-new-drone-general>

Iran to mass-produce two newly developed missiles

Tehran Times, January 13, 2024

Iran's Army Ground Forces Commander, Brigadier General Kioumars Heidari, revealed plans to mass-produce two newly developed missiles after completing their construction phases. He emphasized the ongoing military agenda, including annual drills and the deployment of missile, drone, and artillery units at borders for national security. Heidari condemned the terrorist attack in Kerman, asserting swift retribution. Despite global adversaries' attempts, he affirmed Iran's status as one of the safest countries, attributing it to the Islamic Republic's powerful system and armed forces' vigilance. Iran remains committed to enhancing military capabilities, especially in missile defense, for defensive purposes.

<https://www.tehrantimes.com/news/493653/Iran-to-mass-produce-two-newly-developed-missiles>

Bavar 373, Karrar UAVs thwart threats: commander

Tehran Times, January 14, 2024

The Southwest Air Defense Region's commander, Brigadier General Saeed Amiri, emphasizes the effectiveness of Bavar 373 systems and Karrar UAVs in neutralizing threats. He underscores the crucial role of defense systems in national security and the importance of continuous advancements for stable security. The General describes Bavar 373 and Karrar UAVs equipped with Majid missiles as Iran's ace in the hole, countering potential threats effectively. He concludes by stating that unveiled defense systems represent only a fraction of Iran's achievements, highlighting the country's capacity to reveal more sophisticated capabilities when needed, reaffirming the commitment to national security.

<https://www.tehrantimes.com/news/493715/Bavar-373-Karrar-UAVs-thwart-threats-commander>

Iran's Nuclear Chief: Israel's Footprint Obvious in Most Regional Conflicts

Fars News, January 14, 2024

Head of the Atomic Energy Organization of Iran (AEOI), Mohammad Eslami, asserts that Israel is behind most conflicts in West Asia, benefiting from regional crisis to safeguard its interests. He criticizes IAEA Director General Rafael Grossi for not reporting Israeli nuclear threats to the UN Security Council. Eslami highlights Israeli Prime Minister Netanyahu's nuclear threats and calls for a credible military threat against Iran. Iran warns of a tit-for-tat response to Israel's arrogant behaviour, stressing the violation of NPT and the UN Charter. Iran reiterates the peaceful nature of its nuclear program and advocates for a nuclear-weapon-free zone in the Middle East.

<https://www.farsnews.ir/en/news/14021024000176/Iran%E2%80%99s-Nuclear-Chief-Israel%E2%80%99s-Fprint-Obvis-in-Ms-Reginal-Cnflics>

G. Israel

Underground and Remote: These are the Weapon Systems Developed by the IDF

Israel Defense, January 1, 2024

The IDF's Technological Brigade for Land is developing advanced weapon systems, focusing on advanced weapon systems, focusing on automation and remote operation to save soldier's lives. This includes anti-tank ammunition, a digital network, drones and features like a smart shooting hatch and anti-drone protection for tanks. The brigade, comprising thousands of personnel, is equipped with extensive testing facilities and is working on innovations ranging from armoured vehicles and electro-optic systems to remote-activated tools. Their developments are influenced by the experiences of combat units and the lessons learned during operations, with a priority on meeting the needs expressed by the fighters on the ground.

<https://www.israeldefense.co.il/en/node/60797>

Lior Textile supplies IDF with advanced design drone carries and thousands of tactical protective vests

Israel Defense, January 2, 2024

Israeli company Lior Textiles Industries supplied the IDF with thousands of units of the DRONE WARRIOR, a mini drone carry, deploy, and operate tactical systems for individual soldiers during the recent conflict. The DRONE WARRIOR features a unique modular textile product that functions as a protective tactical vest, allowing soldiers to carry, deploy, and operate drones in the field. The company, facing high demand, nearly sold out its advanced vest stock and prioritized producing essential tactical items for combat soldiers, including innovative designs like the Arsenal Kangaroo Pouch, a triple-compartment six magazine pouch.

<https://www.israeldefense.co.il/en/node/60810>

IAI to Supply Thai Navy with MINI-POP Sensors

Israel Defense, January 4, 2024

IAI to supply 6 Sea Mini-POP sensor payloads to the Royal Thai Navy, enhancing patrol vessels' capabilities in challenging conditions. The multi-sensor payload includes thermal and colour cameras, laser rangefinder, and advanced image processing. Boaz Levy, IAI's President and CEO, emphasizes global trust in IAI's innovative solutions and its commitment to supporting armed forces worldwide. IAI's naval combat suite, featuring air-defense systems, electronic warfare, missiles, radar, and sensors, positions the company as a leading supplier to maritime forces globally.

<https://www.israeldefense.co.il/en/node/60841>

Israeli Company Wearable Devices to Develop Touchless Defense Equipment

Israel Defense, January 8, 2024

Wearable Devices, an Israeli tech firm specializing in AI-powered touchless sensing wearables, partners with a global defense company to design a prototype for defense applications. The collaboration focuses on adapting Wearable Devices, Mudra technology, utilizing advanced neural gesture controls for silent activation in critical defense scenarios. The wristband offers a natural and intuitive way to control devices. The project integrates artificial intelligence, defense analysis, and propriety algorithms to ensure safety, efficiency, and adaptability for future defense users. CEO Asher Dahan expresses excitement about pioneering game-changing solutions for the defense industry.

<https://www.israeldefense.co.il/en/node/60864>

IDF Uncovers Largest Weapons Manufacturing Facility Exposed Since the Start of the War

Israel Defense, January 9, 2024

IDF uncovers largest weapons manufacturing facility in the Al-Bureij

camp, Gaza Strip, since the start of the war. The facility housed components for long-range rockets, mortar shells, charges, and ammunition. Golani combats discovered it through precise intelligence guidance, with underground passages connecting it to a complex network of tunnels used for transporting weaponry across the Gaza Strip. The operation also led to the neutralization of dozens of terrorists in the area.

<https://www.israeldefense.co.il/en/node/60879>

Report: Greece interested in Upgrading M113 APC Fleet Using Israeli Companies

Israel Defense, January 10, 2024

Greece seeks upgrades for its M113 APC fleet and turns to Israeli defense companies, including Elbit Systems, Rafael, and Israel Aerospace Industries. The request for enhancements, covering 400 to 600 vehicles, emphasizes features like unmanned remote-controlled towers with a 12.7 mm machine gun, steering system improvements, electronics/electrics upgrades, enhanced engines, and armor upgrades to at least NATO Level 3 standards. The International Defense Cooperation Directorate (SIBT) of the Israeli Ministry of Defense is coordinating the process, with Israeli firms instructed to submit information exclusively to SIBAT by January 22, 2024, excluding communication with Greek or European companies.

<https://www.israeldefense.co.il/en/node/60886>

RAFAEL Completes Successful Test of Advanced SPYDER Air Defense System

Israel Defense, January 11, 2024

RAFAEL and the Israeli Ministry of Defense succeed in testing the SPYDER Air Defense System in its innovative "All In One" configuration. The test, featuring the interception of a challenging UAV in a complex scenario, underscores the system's direct and effective capabilities. Globally operational, SPYDER defends

against diverse threats like missiles, UAVs, aircraft, helicopters, and tactical ballistic missiles. The "All In One" setup integrates radar, electro-optical launcher, command system, PYTHON, and Derby interceptors on a single platform, offering an optimal, minimally involved solution for point or area defense. Brigadier General (Res.) Pini Yungman highlights RAFAEL's air defense expertise, emphasizing the system's effectiveness against ground-launched threats. The SPYDER system is actively used by various countries, including the Czech Republic.

<https://www.israeldefense.co.il/en/node/60899>

Brazilian Army Set to Equip with Elbit's Software-Defined Radios

Israel Defense, January 11, 2024

The Brazilian Army receives prototypes of Elbit's software-defined radios, locally manufactured by AEL Sistemas, Elbit's subsidiary in Brazil. These prototypes, part of the RDS DEFENSA project, were delivered two weeks ago to equip infantry with a range of radio equipment, including portable devices and those for vehicles. The project, supported by the Military of Defense and various Brazilian Defense Industrial Base companies, focuses on research and development for vehicle radios, portable radios, and backpack radios, covering HF, VHF, and UHF bands (2 to 512 MHz). The radios will undergo comprehensive testing to ensure they meet project requirements before analysis at the Army Evaluation Center.

<https://www.israeldefense.co.il/en/node/60901>

H. East Asia

South Korea's Yoon vows to 'completely block' North's nuclear threat

Nikkei Asia, January 1, 2024

South Korean President Yoon Suk Yeol said in a New Year's address that his country and the U.S. will complete a strengthened defense posture in the first half of the year, a further escalation of the allies' response to North Korea's growing armament.

Yoon said Monday in Seoul that the bolstered defense posture will "completely block" North Korea's nuclear and missile threats, as part of a broad-ranging speech that touched on such topics as housing, education and the economy.

By strengthening its military might, South Korea will be able to achieve "a true and lasting peace based on strength," Yoon said.

<https://asia.nikkei.com/Politics/Defense/South-Korea-s-Yoon-vows-to-completely-block-North-s-nuclear-threat>

North Korea says it will no longer seek reunification with South Korea, will launch new spy satellites in 2024

CNN, January 1, 2024

North Korea will no longer seek reconciliation and reunification with South Korea, Kim Jong Un has declared, as his nation vowed to put three new military spy satellites into orbit in 2024.

Kim said inter-Korean relations had become "a relationship between two hostile countries and two belligerents at war," the state-run news agency KCNA reported.

"It's time for us to acknowledge the reality and clarify our relationship with the South," Kim said, adding that if Washington and Seoul were to attempt a military confrontation with Pyongyang, its "nuclear war deterrent will not hesitate to take serious action."

<https://edition.cnn.com/2023/12/31/asia/north-korea-reconciliation-south-korea-intl-hnk/index.html>

South Korea, US Conduct Firing Drills Near North Korea Border

VOA News, January 3, 2024

South Korean and U.S. troops have conducted joint combat firing drills near the border with North Korea involving heavy weapons, as Pyongyang lambasted the allies for dangerous moves pushing the

region to the brink of “an inferno of nuclear war.”

The exercise by a South Korean Army mechanized infantry brigade and U.S. Army armored Stryker brigade was to test and enhance combat readiness simulating enemy aggression, South Korea said in a statement on Thursday.

The drills took place over a week starting on Dec. 29 and ended on Thursday, the South Korean Army said.

The allies have dramatically increased the scale and intensity of joint drills in the past year amid escalating tension on the Korean peninsula as Pyongyang tested both long-range ballistic missiles and tactical weapons designed to strike targets in the South and the Pacific.

<https://www.voanews.com/a/south-korea-us-conduct-firing-drills-near-north-korea-border/7426130.html>

N. Korea says it tested solid-fuel ballistic missile tipped with hypersonic warhead

France 24, January 14, 2024

The launch, Pyongyang’s first known weapons test this year and its first ever test of a solid-fuel hypersonic intermediate-range ballistic missile (IRBM), was detected by Seoul’s military Sunday afternoon.

A short report in the official Korean Central News Agency said that the solid-fuel IRBM was “loaded with a hypersonic maneuverable controlled warhead.”

The test was meant to verify “the gliding and maneuvering characteristics” of the warhead and the “reliability of newly developed multi-stage high-thrust solid-fuel engines,” KCNA said.

KCNA said that Sunday’s launch “never affected the security of any neighbouring country and had nothing to do with the regional situation.”

<https://www.france24.com/en/asia-pacific/20240114-n-korea-confirms-test-firing-solid-fuel-mid-range-ballistic-missile>

North Korea claims another successful test of its hypersonic glide missile tech

CNN, January 15, 2024

North Korea on Monday claimed to have again tested a missile that could become one of the world’s fastest and most accurate weapons – with the potential to ultimately be fitted with a nuclear warhead.

Kim Jong Un’s regime successfully tested a hypersonic glide vehicle that was fired aloft using solid-fueled engines on Sunday, the state-run Korean Central News Agency (KCNA) said, marking the fourth such test claimed by Pyongyang and the first with a potentially game-changing method of propulsion.

The test was aimed at “verifying the gliding and maneuvering characteristics of intermediate-range hypersonic maneuverable controlled warhead and the reliability of newly developed multi-stage high-thrust solid-fuel engines,” KCNA said.

<https://edition.cnn.com/2024/01/14/asia/north-korea-ballistic-missile-intl-hnk/index.html>

What are solid-fuel missiles, and why is North Korea developing them?

SCMP, January 15, 2024

North Korea test-fired what it says was a new intermediate-range ballistic missile (IRBM) on Sunday, in what would be its first such missile powered by solid fuel designed boost capabilities for launching with little preparation. The new missile was also equipped with a hypersonic manoeuvrable controlled warhead, state media said. The launch comes after the nuclear-armed North said it had tested solid-fuel engines for an coming new-type IRBM in November, and conducted at least three tests last year of its new solid-fuel Hwasong-18 intercontinental ballistic missile (ICBM). Here are some characteristics of solid-fuel technology,

and how it can help the North improve its missile systems.

<https://www.scmp.com/news/asia/east-asia/article/3248420/what-are-solid-fuel-missiles-and-why-north-korea-developing-them>

I. Australia

AUKUS racing to get nuclear subs up to speed

Asia Times, January 3, 2024

AUKUS, a US, UK and Australia security partnership, is accelerating its nuclear submarine program to address gaps in infrastructure, human resources and technology-sharing protocols.

Defense News reported in late December that the US Navy plans to conduct its first nuclear submarine maintenance work in Australia this summer using the submarine tender Emory S Land to train 30 Australian sailors on how to repair its Virginia-class vessels. The report says the training will help to establish a nuclear-powered attack submarine maintenance capability at the HMAS Stirling naval base in Western Australia.

<https://asiatimes.com/2024/01/aukus-racing-to-get-nuclear-subs-up-to-speed/>

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