

Nuclear, Missile & Space Digest

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A Fortnightly Newsletter from the MP-IDSA

April 15, 2024

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A. India

New generation ballistic missile Agni-Prime successfully flight-tested

The Hindu, April 3, 2024

The new generation ballistic missile Agni-Prime was successfully flight-tested by the Strategic Forces Command (SFC) along with the Defence Research and Development Organisation (DRDO) from the Dr APJ Abdul Kalam Island off the coast of Odisha around 7pm on Wednesday. The test met all the trial objectives validating its reliable performance, as confirmed from the data captured by a number of range sensors deployed at different locations, including two downrange ships placed at the terminal point.

Agni-Prime Missile: New generation ballistic missile Agni-Prime successfully flight-tested - The Hindu

Twenty-fifth anniversary of National security council: Achievements and challenges

The Times of India, April 13, 2024

The National security council (NSC) marks a significant milestone, celebrating its twenty-five years of existence in its present form. Established on the 16th April 1999 following nuclear tests by India and Pakistan, the NSC emerged from a recognised need for a comprehensive, whole-of-nation approach to address the increasing challenges in an uncertain global landscape. Its primary objective has been to provide authoritative and holistic assessments of India's security challenges across military, internal security, economic, technological, and external relations domains, encompassing all aspects of Comprehensive National Power, along with well-considered policy options. The NSC evolved into a full-fledged organisation in the last 25 years and now its authority and responsibilities are well defined.

Twenty-fifth anniversary of National security council: Achievements and challenges (indiatimes.com)

B. Russia

Russian missile cruiser Varyag enters Mediterranean Sea

TASS, April 1, 2024

The missile cruiser Varyag, the flagship of the Russian Pacific Fleet, has passed the Suez Canal and entered the Mediterranean Sea, the Eastern Military District said in a statement.

"The day before, the Varyag completed crossing the Red Sea, demonstrating the presence of the Russian Navy's St. Andrew's flag in the region. In the Mediterranean Sea, the Pacific Fleet's missile cruiser will operate in accordance with the fleet's previously approved combat training plan," the statement said.

The ship's crew continues to fulfill the mission it was given for the long-range voyage.

<https://tass.com/defense/1768417>

Russia upgrades Shmel robot to fight petal mines

TASS, April 3, 2024

He High Precision Complexes Holding has upgraded remotely controlled Shmel MGR-4 mine clearance robot for effective fight against antipersonnel petal mines, Rostec said.

"The mine clearance robot received a compact sweep that simplifies transportation of the vehicle and promotes effective destruction of antipersonnel mines, including small petals. The new sweep has a smaller size and weight and can be transported in an assembled state by a truck. It is equipped with additional sweeping elements that leave no chance even to the smallest antipersonnel mines," it said.

The robot is in high demand in new Russian regions where Ukrainian military widely uses petal mines against civilian population. The upgraded Shmel is demonstrated at Expotechnostrazh show in St. Petersburg.

<https://tass.com/defense/1769993>

Rostec hands over first batch Su-34 bombers to Russian Aerospace Forces this year

TASS, April 5, 2024

Novosibirsk Aircraft Production Association Plant named after V. P. Chkalov (part of Rostec) handed over the first batch of Su-34 bombers to the Russian Ministry of Defense this year, according to the press service of Rostec.

"This year's first batch of Su-34 front-line bombers was transferred to the Russian Aerospace Forces as part of the execution of a state defense order. The aircraft were manufactured at the Novosibirsk Aviation Plant named after V. P. Chkalov <...> After completing the entire complex of factory tests, the aircraft was sent to the customer," the press service said.

<https://tass.com/defense/1770935>

Russia designs remotely detonated counter-UAV shell

TASS, April 8, 2024

Rostec is designing a small-caliber remotely detonated counter-UAV shell against small and FPV drones, Bekhan Ozdov, Industrial Director of Weapon Systems at Rostec State Corporation, said in an interview with TASS.

"Our designers are creating weapons to fight hostile small drones and loitering munitions, including FPV drones. We initiated the design of a small-caliber munition with a multi-element projectile and remotely controlled detonator," he said.

The projectile explodes by command and sends a swarm of destructive elements towards the drone, he added.

<https://tass.com/defense/1771815>

Russia increases glide bomb output

TASS, April 8, 2024

Rostec and the Tactical Missiles Corporation (KTRV) are increasing the output of

precision air bombs with the universal gliding and correction modules (UMPK) of all calibers and types, Bekhan Ozdov, Industrial Director of Weapon Systems at Rostec State Corporation, said in an interview with TASS.

"UMPK confirms that everything of genius is simple. Our experts together with the KTRV are adapting ordinary air munitions to the gliding and correction module. The need for long-range weapons increases the output of air bombs of all calibers and types for engagement with the mentioned modules," he said.

The modules increase the bomb range to dozens of kilometers and allow dropping them from outside the hostile air defense zone.

<https://tass.com/defense/1771817>

Russia Sends Instructors, Air Defense System to Niger

Moscow Times, April 12, 2024

Russian military instructors have arrived in Niger with an air defense system and other equipment as part of the West African nation's deepening security ties with Moscow, state television announced late Thursday.

Niger's military government agreed in January to step up military cooperation with Russia after expelling French forces that were helping to fight jihadist rebellions in several neighboring countries.

The Tele Sahel broadcaster showed a Russian transport plane arriving at Niamey airport on Wednesday night. It said that the "latest military equipment and military instructors from the Russian Defense Ministry" had arrived.

Russia will help "install an air defense system ... to ensure complete control of our airspace," the report said.

<https://www.themoscowtimes.com/2024/04/12/russia-sends-instructors-air-defense-system-to-niger-a84819>

Final Zaporizhzhia unit being switched to cold shutdown

World Nuclear News, April 12, 2024

The International Atomic Energy Agency (IAEA) Director General Rafael Mariano Grossi has been urging the Russian operators of the occupied plant to put all its units into cold shutdown, as part of efforts to minimise risks to nuclear safety and security.

In a message posted on its Telegram channel, the plant operators announced that on Friday at 07:00 local time, "specialists began cooling down the N4 power unit. The process is organised in accordance with all necessary norms and regulations. The work is progressing normally".

The plant, which has been under Russian military control since early March 2022, stopped generating electricity in September 2022 but has kept one of its units in 'hot shutdown' to provide heating for the plant and the nearby town of Energodar, as well as for process steam for liquid waste treatment at the site.

<https://www.world-nuclear-news.org/Articles/Final-Zaporizhzhia-unit-being-switched-to-cold-shu>

C. Europe

Nuclear projects receive UK space funding boost

World Nuclear News, April 8, 2024

A total of GBP13 million of funding, the second phase of investment awarded through the Agency's GBP20 million International Bilateral Fund (IBF), is being announced today at the 39th Space Symposium in Colorado Springs, USA, the UK Space Agency said. This follows a first phase announced last year, which provided funds of up to GBP75,000 each for 32 projects which then entered into a competitive process to receive Phase 2 funding.

The funding to Rolls-Royce Submarines and BWXT Advanced Technologies LLC is for a project to "identify the optimum

technologies for a fission nuclear system which balances flexibility to a range of space power missions and maximises performance whilst minimising programme and technical risk."

The second nuclear project to receive Phase 2 funding is a collaboration between the University of Leicester and partners from the UK, USA and Japan who will work together to identify a range of mission opportunities for UK space nuclear power technologies. The collaboration also includes the development of hybrid power systems with existing US conversion technologies.

<https://www.world-nuclear-news.org/Articles/Nuclear-projects-receive-UK-space-funding-boost>

Germany fully backs submarine negotiations with India, wants to offer military cooperation alternatives to New Delhi: German envoy

The Economic Times, April 9, 2024

The German government is fully backing negotiations with the Indian Navy for its Project 75 India tender to build six new conventional submarines in which German firm Thyssenkrupp Marine Systems is partnering with Indian Mazgaon Dockyards Limited as one of the two competing industry teams, Germany's Ambassador to India Philipp Ackerman said.

In an interview over email, the German envoy said that New Delhi was at the forefront of Berlin's business strategy in Asia where it was strongly diversifying its business relations due to the "increasingly challenging behaviour of India's big neighbour in the North East" and other reasons.

<https://economictimes.indiatimes.com/news/defence/germany-fully-backs-submarine-negotiations-with-india-wants-to-offer-military-cooperation-alternatives-to-new-delhi-german-envoy/articleshow/109161107.cms?from=mdr>

Romania's SMR site selection process gets IAEA approval

World Nuclear News, April 10, 2024

The IAEA Site and External Events Design (SEED) follow-up mission's conclusion was announced by Romania's nuclear power company Nuclearelectrica and RoPower Nuclear, the small modular reactor (SMR) project company.

The mission was requested by Nuclearelectrica to independently assess the process against the IAEA's safety standards, before moving on to the next phase of the site evaluation ahead of applying for a site licence at Doicești, where a thermal power plant will be replaced.

Paolo Contri, mission leader and Head of the External Events Safety Section in the IAEA's Department of Nuclear Safety and Security, welcomed the steps taken to conduct "an objective, feasible and safety-oriented site selection process" and the request for a follow-up mission to the 2022 one was the "best evidence" of a "commitment to safety and to ... minimise the risk that safety issues discovered at a later stage may challenge the smooth and safe project implementation. The experience under development in Romania can be of great value for the nuclear community".

<https://www.world-nuclear-news.org/Articles/Romania-s-SMR-site-selection-process-gets-IAEA-app>

Ukraine, UK to engage in joint production of weapons

Firstpost, April 10, 2024

As part of a wartime initiative to strengthen Ukraine's domestic weapons industry by cooperating with friends, officials in Kyiv announced that the two countries had inked a framework agreement to collaborate in the defense and arms production sectors.

About thirty British defense businesses traveled to Kyiv for a military industry conference, where the pact was signed, in

order to discuss possible collaborative ventures with Ukrainian producers of weapons and defence.

Following the signing ceremony, Oleksandr Kamyshin, the Minister of Strategic Industries of Ukraine, informed reporters that this was the first intergovernmental agreement on collaboration.

<https://www.firstpost.com/world/ukraine-uk-to-engage-in-joint-production-of-weapons-13758365.html>

France to spend \$540 million on artillery propellant production

Defense News, April 11, 2024

French explosives maker Eurenco will spend •500 million (U.S. \$540 million) to restart explosive powder production and boost output of artillery propellants, said French President Emmanuel Macron during a visit to the company's site in Bergerac on Thursday.

The investments by state-owned Eurenco over the next two years will double propellant production, Macron said during his visit, timed to the kickoff of new production capacity construction. The company will also resume production of the explosive powder used to make propellant charges, after France shut down powder production in 2007 and switched to imports.

<https://www.defensenews.com/global/europe/2024/04/11/france-to-spend-540-million-on-artillery-propellant-production/>

Powerful laser to be installed on Royal Navy warship by 2027

Royal Navy, April 12, 2024

The cutting-edge DragonFire laser will be installed on a warship in 2027, adding to the Royal Navy's potent array of air defence weaponry, which includes the Sea Viper and Sea Ceptor missile systems which have recently shot down Houthi targets in operations in the Red Sea with HMS Diamond and HMS Richmond.

A burst of the high-intensity beam from DragonFire costs no more than £10 – yet can engage targets – drones, missiles, aircraft – at the speed of light by concentrating it on a target.

The laser has been under development for nearly a decade and underwent tests by government scientists on the Ministry of Defence's ranges in the Hebrides at the start of this year.

<https://www.royalnavy.mod.uk/news-and-latest-activity/news/2024/april/12/240412-powerful-laser-to-be-installed-on-royal-navy-warship-by-2027>

Germany to send Patriot air-defense system to Ukraine but holds out on Taurus missiles

Politico, April 13, 2024

Kyiv has been pleading with its Western allies for additional military supplies, including more Patriot missile batteries. Western support has weakened in recent months, with a major American aid package held up by partisan bickering in the U.S. Congress.

"This is a real manifestation of support for Ukraine at a critical time for us," Zelenskyy said in a statement on the Ukrainian government website. "I call on all other leaders of the partner states to follow suit," he said.

Despite the new aid, Scholz is still refusing to provide Kyiv with Taurus cruise missiles – a move Zelenskyy sharply criticized earlier this week. Ukraine wants the German-made Taurus missiles, which have a range of around 500 kilometers and carry a powerful warhead, in order to strike targets behind the frontlines, such as the Kerch Bridge linking Russia and occupied Crimea.

Scholz has adamantly refused to send the German missiles to Ukraine, arguing that it could lead to an escalation of the war or even draw Germany into direct conflict with Russia.

<https://www.politico.eu/article/germany-patriot-air-defense-military-ukraine/>

D. The United States of America

F-16s arrive to be modified for autonomous testing

United States Air Force, April 3, 2024

The 96th Test Wing and 53rd Wing welcomed the first three F-16 Fighting Falcons ready to take part in the Viper Experimentation and Next-gen Operations Model – Autonomy Flying Testbed/ program.

VENOM-AFT is designed and funded to accelerate testing of autonomy software on crewed and uncrewed aircraft. VENOM-AFT complements the autonomy data and artificial intelligence experimentation proving ground at Eglin Air Force Base and informs the Collaborative Combat Aircraft program and other autonomy developers.

The next step for the VENOM program is to modify the F-16 aircraft into test platforms to rapidly evaluate autonomous capabilities.

"The VENOM program marks a pivotal chapter in the advancement of aerial combat capabilities. This transformative program holds the potential to redefine air combat paradigms by fostering novel autonomous functions for current and future crewed and uncrewed platforms," said Maj. Ross Elder, VENOM developmental test lead. "We look forward to the culmination of years of engineering and collaboration, as VENOM leads a measured step towards a new age of aviation."

<https://www.af.mil/News/Article-Display/Article/3728795/f-16s-arrive-to-be-modified-for-autonomous-testing/>

US companies sign up with Oklo for microreactor power

World Nuclear News, April 9, 2024

Oil and gas producer Diamondback Energy Inc has signed a letter of intent on a long-term power purchase agreement to use Oklo's Aurora 'powerhouses' for its operations in the Permian Basin. Oklo has

also signed a deal to provide up to 500 MWe of power to Equinix to serve its data centres in the USA.

The non-binding letter of intent (LOI) with Texas-based Diamondback outlines a proposed 20-year power purchase agreement (PPA) focusing on using Aurora powerhouses to supply “reliable and emission-free electricity” to Diamondback’s operations in the Permian Basin, in the south-western USA. According to the terms, Oklo intends to licence, build, and operate powerhouses capable of generating 50 MW of electric power to Diamondback E&P LLC, a wholly owned subsidiary of Diamondback near Midland, Texas.

<https://www.world-nuclear-news.org/Articles/US-companies-sign-up-with-Oklo-for-microreactor-po>

U.S. and Australia Conduct Bilateral Operations

United States Navy, April 9, 2024

The U.S. Navy and Royal Australian Navy (RAN) conducted bilateral operations in the South China Sea, April 8.

The exercise included the Independence-variant littoral combat ship USS Mobile (LCS 26) and the RAN Anzac-class HMAS Warramunga (FFH 152)

“USS Mobile is preparing to showcase not just interoperability with our international partners, but true interchangeability,” said Cmdr. David Gardner, commanding officer of Mobile. “Anytime we sail with our international partners, our capacity for coordination, communication, and execution of operations at sea increases, approaching parity with similar USN-only combined operations.”

The U.S. Navy regularly participates with allies and partners in high-end maritime exercises and operations, which have continued to grow in scale, scope, and complexity, to create combined operations that enhance interoperability, boost deterrence, and demonstrate shared resolve.

<https://www.navy.mil/Press-Office/News-Stories/Article/3735322/us-and-australia-conduct-bilateral-operations/>

WSF-M successfully launches from Vandenberg SFB

United States Space Force, April 11, 2024

A SpaceX Falcon 9 rocket was successfully launched April 11 from Space Launch Complex-4 East carrying U.S. Space Force’s Weather System Follow-on Microwave, or WSF-M, into low Earth orbit.

The launch is the result of a combined effort by the Guardians and Airmen of Space Launch Delta 30 and Space Systems Command in Los Angeles in support of the U.S. Space Force and SSC’s program executive office, Assured Access to Space, as well as SpaceX personnel.

“The launch of the WSF-M satellite represents a significant step forward in our mission to enhance our nation’s space capabilities,” said Col. Mark Shoemaker, Space Launch Delta 30 commander. “Our dedicated Guardians and Airmen at Vandenberg ensure assured access to space, standing ready to support critical national security space launches when our nation calls.”

Once on orbit, the WSF-M satellite will provide U.S. and allied warfighters with essential weather data, including the measurement of ocean surface wind speed and direction, ice thickness, snow depth, soil moisture, and local spacecraft energetic charged particle environment. The data gathered by WSF-M will be provided to meteorologists in support of the generation of a wide variety of weather products necessary to conduct mission planning and operations globally.

<https://www.spaceforce.mil/News/Article-Display/Article/3738652/wsf-m-successfully-launches-from-vandenberg-sfb/>

U.S., Japan Military-to-Military Relationship Reaches ‘New Heights’

U.S. Department of Defense, April 11, 2024

Secretary of Defense Lloyd J. Austin III met at the White House with President Joe

Biden and Prime Minister Fumio Kishida of Japan yesterday to participate in discussions related to strengthening the U.S. and Japan relationship.

As part of the effort to enhance U.S. and Japan security cooperation, both nations agreed to, for instance, an upgrading of alliance command and control. Doing so would enable better integration of operations and capabilities, plus allow for greater interoperability as well as planning between U.S. and Japanese forces in peacetime and during contingencies.

Also discussed were efforts at bolstering regional networked security. Both countries will cooperate on a networked air defense architecture, incorporating future capabilities with Australia. That includes looking at enhanced cooperation in missile defense information sharing.

<https://www.defense.gov/News/News-Stories/Article/Article/3739131/us-japan-military-to-military-relationship-reaches-new-heights/>

Japan and USA form strategic partnership for fusion

World Nuclear News, April 11, 2024

The new partnership brings together the US Department of Energy (DOE) and Japan's Ministry of Education, Culture, Sports, Science and Technology to work to accelerate the demonstration and commercialisation of fusion energy. The announcement was made during a visit by Prime Minister Fumio Kishida to the USA.

It will leverage a long history of Japan-US collaborative activities in the area of fusion covered by the Coordinating Committee on Fusion Energy (CCFE), which was established in 1979 and is currently implemented under a 2013 intergovernmental agreement. The two countries are also both participants in the ITER multinational fusion project.

The partnership is expected to further develop complementarity between US and Japanese resources and facilities in fusion, including those in universities, national laboratories and private companies in the

respective countries. It will focus on six pillars:

- Address the scientific and technical challenges of delivering commercially viable fusion energy for various fusion systems
- Explore opportunities for shared access and/or development of facilities required for fusion research and development
- Promote the international harmonisation of regulatory frameworks and codes and standards, including leveraging of rule-making efforts by the US Nuclear Regulatory Commission as well as ongoing discussions under the auspices of the International Atomic Energy Agency and the Agile Nations Fusion Energy Working Group
- Identify and support the development of resilient global supply chains that facilitate commercial fusion deployment
- Support public engagement with communities to facilitate a social licence for deploying fusion energy and to support an equitable clean-energy transition
- Promote skills development to ensure the people and talent growth necessary for the robust, inclusive and diverse workforce required by the fusion sector in the next decade and beyond.

<https://www.world-nuclear-news.org/Articles/Japan-and-USA-form-strategic-partnership-for-fusio>

West Asia

E. Israel

IWI Introduces the ARBEL: A Revolutionary Computerized Small-Arms System

Israel Defense, April 4, 2024

IWI - Israel Weapon Industries, a member of the SK Group, announced the launch

of the world's first computerized small arms system - the ARBEL.

New challenges such as enemies appearing briefly (~3 sec.) and numerous drones in the air define the modern battlefield. After a long period of R&D, IWI has developed the ARBEL system to address the immediate action in the modern threats on the battlefield. The ARBEL takes into consideration the continuous fights and heavy weights compensating for the operator's declining physical and mental abilities due to exertion, fatigue, stress, and other factors, thus, increasing survivability.

The system increases the lethality, accuracy, and survivability of the operator. The system includes three main components: a computer-based platform, an upgraded electronic trigger mechanism with sensors and a new firing mode, and a removable battery. The ARBEL system does not influence the operation of the gun. The operator can still use the gun as a standard weapon even if the battery runs out.

One significant outcome of the abovementioned features is ammunition saving, which is, of course, one of the big factors during combat situations and training.

<https://www.israeldefense.co.il/en/node/61673>

Iran Attacks Israel with Over 300 Drones, Cruise Missiles and Ballistic Missiles

Israel Defense, April 14, 2024

During Iran's attack on Israel overnight, it launched more than 300 drones and missiles. According to the IDF, 99% of the threats were intercepted.

"The Iranian threat was met by the IDF's aerial and technological superiority, combined with a powerful coalition. Together, the vast majority of the threats were intercepted," said IDF Spokesperson, Rear Admiral Daniel Hagari.

None of the 170 drones entered Israeli territory: dozens were intercepted by Israeli

Air Force fighter jets, Israel's aerial defense systems, and the aircraft and defense systems of Israel's partners, Hagari said.

Iran also launched more than 30 cruise missiles, none of which entered Israel's territory. 25 of them were intercepted by the Air Force. The third kind of threat launched at Israel overnight was ballistic missiles: over 120 missiles, out of which only a few managed to penetrate Israeli territory – falling in the Nevatim Air Base in southern Israel, causing damage to infrastructure. Overnight, it was already reported that Nevatim would be a target. The base remains functional. A 10-year-old Israeli girl was seriously wounded by shrapnel from one of the interceptions.

Israel was also attacked overnight by Iranian proxies from Iraq and Yemen, but none of the threats entered its territory. Hezbollah in Lebanon also launched dozens of rockets toward Israel's northern area – and Israel retaliated with air force attacks on targets in Lebanon.

<https://www.israeldefense.co.il/en/node/61741>

F. Iran

IRGC fires missiles, drones at Israeli positions in retaliatory attacks

IRNA, April 14, 2024

According to IRNA's Defense Correspondent. An IRGC statement said that its Aerospace Force fired dozens of missiles at specific Israeli targets inside the occupied territories.

The strikes are in response to numerous crimes committed by the Zionist regime, including an attack on the consular section of the Iranian embassy in Damascus and the martyrdom of a group of commanders and military advisors of our country in Syria, the statement added.

An Israeli military spokesman has also confirmed that the missiles and drones were fired from Iran and said that the Zionist regime has put its anti-missile systems on alert.

American and Israeli media have also confirmed that Iran has begun its attacks by firing missiles and drones.

<https://en.irna.ir/news/85443281/IRGC-fires-missiles-drones-at-Israeli-positions-in-retaliatory>

Report: 150 missiles fired at Israeli-occupied territories

IRNA, April 14, 2024

The report came after Iran's Islamic Revolution Guards Corps (IRGC) launched an extensive retaliatory missile and drone operation against the Zionist regime in response to its attack on the Iranian mission in Syria early this month.

Meanwhile, the Israeli Army Radio also reported that sirens sounded 720 times in different parts of occupied Palestine in response to the first wave of Iranian attacks.

The New York Times said that Iran has fired more than 300 drones and missiles toward the occupied territories.

<https://en.irna.ir/news/85443483/Report-150-missiles-fired-at-Israeli-occupied-territories>

U.S. Transfers Seized Iranian Small Arms to Ukraine

Israel Defense, April 15, 2024

The US Central Command announced the transfer of enough small arms to equip a brigade of the Ukrainian Armed Forces, originating from the thousands of weapons and millions of rounds of ammunition seized in recent years from Iranian shipments to the Houthis in Yemen.

The transfer, announced last week, includes 5,000 AK-pattern rifles, RPG-7 rocket launchers, machine guns, and over 500,000 rounds of 7.62mm ammunition.

The Firearm Blog notes that this is not the first transfer of seized small arms to Ukraine, with a previous transfer occurring in October 2023 when 1.1 million rounds of unspecified 7.62mm ammunition were transferred. In terms of the types of rifles likely transferred, previously released images of the seized arms largely appear to be of

Chinese origin (7.62x39mm Type 56 AKs) and Russian origin (VEPR AKS20U in 5.45x39mm)

<https://www.israeldefense.co.il/en/node/61766>

G. Turkiye

Turkiye pulls out of EU arms limitation deal

The Cradle, April 5, 2024

Turkiye has followed suit with its NATO allies and Russia in suspending an arms treaty that imposed limitations on conventional military equipment in Europe.

Turkish President Recep Tayyip Erdogan signed a decree on 4 April to suspend Ankara's duties under the Treaty on Conventional Armed Forces in Europe.

In November last year, Washington and NATO members withdrew from the European arms-limiting pact after Russia made the same move.

"The CFE Treaty was concluded at the end of the Cold War, when the formation of a new architecture of global and European security based on cooperation seemed possible, and appropriate attempts were made," Russia's foreign ministry said, adding, "Even the formal preservation of the CFE Treaty has become unacceptable from the point of view of Russia's fundamental security interests."

The move by Ankara signals warming ties between Turkiye and the US before a planned meeting between Erdogan and US President Joe Biden in Washington next month.

<https://thecradle.co/articles-id/24272>

H. East Asia

North Korea fires suspected intermediate-range ballistic missile

Al Jazeera, April 2, 2024

North Korea fired a suspected intermediate-range ballistic missile into the

sea on Tuesday in a possible test of a new rocket using solid fuel, drawing swift condemnation from South Korea, Japan and the United States. South Korea's Joint Chiefs of Staff said that it detected the launch from the area of the North Korean capital Pyongyang on Tuesday at 6.53am.

North Korea fires suspected intermediate-range ballistic missile | Weapons News | Al Jazeera

IAEA Completes Nuclear Security Mission at Japan's Kashiwazaki-Kariwa Nuclear Power Station

IAEA, April 2, 2024

An International Atomic Energy Agency (IAEA) team of experts completed a nuclear security mission at the Kashiwazaki-Kariwa nuclear power station (KKNPS) in Japan today, which was carried out at the request of the country's operator, Tokyo Electric Power Company (TEPCO). The nine-day mission, conducted from 25 March to 2 April 2024, aimed to assess the enhancement of the physical protection measures at the KKNPS, Japan's largest nuclear facility with seven reactors, and to provide further advice as necessary to the facility's operator.

A physical protection system comprises people, procedures and equipment to provide defence in depth to address threats and to protect against both unauthorized removal of nuclear material and sabotage of nuclear material or facilities.

The five-person team assessed and observed physical protection measures against the Convention on the Physical Protection of Nuclear Material as amended, and relevant IAEA Nuclear Security Guidance documents. They visited the KKNPS in Niigata Prefecture, Japan, and met with staff of the facility's operator, TEPCO. The team included experts from Finland, the United Kingdom and the United States of America, as well as one IAEA staff member.

IAEA Completes Nuclear Security Mission at Japan's Kashiwazaki-Kariwa Nuclear Power Station | IAEA

South Korea puts second military spy satellite successfully into orbit

Al Jazeera, April 8 2024

South Korea has successfully launched its second military reconnaissance satellite, days after North Korea reiterated its intention to launch multiple spy satellites this year.

The satellite entered orbit after its launch on a SpaceX Falcon 9 rocket from the John F Kennedy Space Center in Florida in the United States on Sunday, South Korea's National Ministry of Defense said.

South Korea puts second military spy satellite successfully into orbit | Military News | Al Jazeera

Fourth APR 1400 Begins Commercial operation in South Korea

Nuclear News Wire, April 11, 2024

Unit 2 of South Korea's Shin-Hanul nuclear power plant entered commercial operation on April 5, Korea Hydro & Nuclear Power announced. It is the nation's 26th operating reactor, which continues the upward nuclear trend as South Korea reverses a previous phase-out plan for nuclear.

The state-run KHNP obtained the operating license for Unit 2 and began loading fuel last September. The 1350-MWe pressurized water reactor reached first criticality on December 6 and was connected to the grid on December 21. Last week, the Nuclear Safety Commission approved the final inspection.

Unit 2 is the second of two APR-1400 reactors at the site—with a further two planned there—and is the nation's fourth APR-1400. Two more APR-1400s are under construction at the Saeul nuclear plant, which will join that site's two operating units.

Fourth APR-1400 begins commercial operation in South Korea – ANS/Nuclear Newswire

South Korea, Japan, US hold naval drills amid N. Korea threats

Reuters, April 12, 2024

South Korea, Japan and the United States staged long-planned joint naval exercises involving an American aircraft carrier to ensure readiness against nuclear and missile threats from North Korea.

North Korea has been accelerating weapons development, testing solid-fuel hypersonic missiles last week, and leader Kim Jong Un said on Wednesday now was the time to be more prepared for war than ever, citing an unstable geopolitical situation

South Korea, Japan, US hold naval drills amid N.Korea threats | Reuters

Further Japanese research reactor free of HEU

World Nuclear News, April 12, 2024

The Japan Materials Testing Reactor Critical Assembly (JMTRC) was built in 1965 in advance of operation of the adjacent Japan Materials Testing Reactor (JMTR). It was used to perform various critical experiments to collect data on characteristics of the JMTR core and in-core irradiation facilities.

The majority of the facility's HEU was repatriated to the USA between 2003 and 2009 following its decommissioning in 1996.

In December 2023, the US Department of Energy National Nuclear Security Administration (NNSA), Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) and JAEA transported the remaining HEU from the JMTRC to the USA.

The Y-12 National Security Complex in Oak Ridge, Tennessee, provided US technical support for the project and received the HEU upon its arrival in the USA. The HEU will be downblended to low-enriched uranium and/or dispositioned, permanently reducing the risk it could be used to produce an improvised nuclear device.

The removal of all the HEU from the JMTRC was welcomed by US President Joe Biden and Japanese Prime Minister Fumio Kishida when they met in Washington, DC, on 10 April. During the meeting, they confirmed further advance cooperation in strengthening global nuclear non-proliferation and nuclear security.

The removal of the JMTRC HEU fulfills a commitment made by NNSA Administrator Jill Hruby and MEXT former Deputy Minister Yanagi Takashi in November 2021 and was completed more than two years ahead of schedule through the financial support of the Defense Threat Reduction Agency.

Further Japanese research reactor free of HEU : Regulation & Safety - World Nuclear News (world-nuclear-news.org)

I. Southeast Asia

Indonesia turns to France's Naval Group for submarines

Defence News, April 4, 2024

Indonesia has signed a contract with local firm PT PAL and France's Naval Group for two Scorpene-class submarines, the latter business announced.

The two companies will jointly build the boats under the deal, inked March 28. The Indonesian Navy's future submarines are described as Scorpene Evolved Full LiB submarines featuring lithium-ion batteries, according to Naval Group's news release. Indonesia's Scorpene-class submarines are to be the first to use such battery technology.

The French shipbuilder stated the lithium-ion technology allows for more efficient energy, a decreased snorkeling rate and a reduced charging time.

The boats will be "built in Indonesia in a PT PAL shipyard, through transfer of technology from Naval Group.

Indonesia turns to France's Naval Group for submarines (defensenews.com)

AUKUS defence technology pact welcomes Japan, but the EU is excluded for now

Science Business, April 10, 2024

The AUKUS defence partnership between the US, UK and Australia has said it is looking to cooperate with Japan on military technology projects, but for now there's no sign of EU countries being allowed to join, even as Brussels tries to ramp up defence R&D.

Announced in 2021 to counter China in the Indo-Pacific, AUKUS caused a diplomatic row with Paris over its centrepiece deal to supply Australia with nuclear-powered submarines, cancelling a prior French contract.

But beyond the submarine deal, AUKUS is also emerging as a military technology partnership, promising joint work on areas ranging from cybersecurity to quantum positioning and navigation.

All three countries are lowering export control barriers to allow relatively seamless joint military R&D and technology exchange, but there's some concern this could leave EU countries at a relative disadvantage if they want to work with AUKUS countries.

AUKUS defence technology pact welcomes Japan, but the EU is excluded for now | Science | Business (sciencebusiness.net)

U.S., Japan, Philippines strike deals on defense, investment at leaders' summit

Economic Times, April 12, 2024

Japanese Prime Minister Fumio Kishida, U.S. President Joe Biden, and Philippines President Ferdinand Marcos Jr. unveiled agreements to boost security and economic ties at the White House. Highlights include military upgrades, potential Japanese involvement in the AUKUS pact, Microsoft's \$2.9 billion investment in Japan, joint AI research, Japan's participation in the Artemis moon project, and a partnership on nuclear fusion. Plans for a high-speed rail in the U.S. using Japanese bullet trains and

new investments in the Philippines were also announced.

japan: US, Japan, Philippines strike deals on defense, investment at leaders' summit - The Economic Times (indiatimes.com)

J. Africa

IAEA Empowers African Scientists to Manage Mapping of Regional Groundwater Resources

IAEA, April 5, 2024

Scientists in the Sahel are finding quality groundwater sources — thanks to a nuclear technique and a decade of support and training from the IAEA.

Water resources in Africa are under pressure due to growing water demand, water quality degradation and climate change. On the continent, more than 41 groundwater aquifers are shared by two or more countries, making a joint approach to protection beneficial.

To strengthen characterization, management and monitoring of groundwater resources in Africa, the IAEA is supporting African experts to use nuclear techniques such as Isotope hydrology. By analysing naturally occurring isotopes (a type of atom) in groundwater, scientists can assess the age, vulnerability and sustainability of water resources. The analysis of nitrogen isotopes in water can also be used to work out the source of pollutants which threaten aquifers, strengthening water security and resilience planning.

The IAEA is equipped with a state-of-the-art Isotope Hydrology Laboratory, which maps water and provides scientific insights for the sustainable management of water resources like rivers, lakes, and underground aquifers. Through its technical cooperation programme, the IAEA has been providing training, support for academic research and equipment to African scientists in the Sahel region, which has particularly scarce water resources and is dependent on groundwater.

IAEA Empowers African Scientists to Manage Mapping of Regional Groundwater Resources | IAEA

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