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A Fortnightly Newsletter from the Indian Pugwash Society

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Contents

A. India

- India, Indian test reactor reaches operation landmark
- Statement on accidental firing of missile
- Ministry of Defence identifies 18 major platforms for industry led Design and Development
- India wary of China setting up Bangladesh missile maintenance hub
- Missile accidentally fired 'during inspection' at secret IAF base, Pakistan 'didn't track'
- India To Expand BrahMos Missiles' Range Up To 800km In Upgraded Air Launch Version
- Indian engineering firms mark steam generator milestones
- Government plans on AMCA
- ISRO successfully conducts ground test of solid booster stage for SSLV

B. Russia

- Ukraine worked on development of biological weapons near Russian borders - statement
- Ukraine gets air situation data from ?-3? planes in Poland's air space - Russian ministry
- Situation at Chernobyl NPP under joint control - Russian diplomat
- Russia notifies OPCW of Ukraine's plans to stage provocation at Kharkov's nuclear reactor
- Ukraine's possible creation of nuclear bomb was a motive for Russia to launch operation
- IAEA chief holds 'constructive' talks with Russia's Lavrov
- US studied spread of infections via migrating birds in Ukrainian labs - Defense Ministry
- Belarusian power engineers provide Chernobyl NPP with electricity - official
- US evacuated documents, biomaterials from Ukrainian bio labs to Lvov, Poland - statement
- Nuclear war is impossible - Russian MFA
- Russia requests Security Council meeting on US biological programs in Ukraine - diplomat



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- Russian drone eliminates Ukrainian multiple rocket launcher from altitude of 3,000 meters
- Rosatom denies plans of full control over Zaporozhye NPP - IAEA
- Russia Deploys a Mystery Munition in Ukraine
- U.N. Secretary General Warns of Possibility of Nuclear War amid Russian Invasion
- Kiev's intent to develop nuclear weapons was a real threat - Putin
- Russia backs down on demands in Iran nuclear deal talks, making revival of 2015 pact imminent
- Sevmash shipyard to build fifth-generation nuclear subs after upgrade - chief
- Russia's mission informs IAEA about situation at Zaporozhskaya, Chernobyl NPPs
- Admiral Nakhimov missile cruiser to be armed with 4th generation weapons
- Strike by Kinzhal missile in Ukraine confirmed its efficiency - Defense Ministry
- Newly-built, upgraded Tupolev-160 bombers to be delivered 2022 - deputy prime minister
- Keel-laying ceremonies for two Lada project subs due this year - corporation

C. China

- China to carry out Phase-4 lunar probe missions before 2030, build permanent station by 2035: project chief designer and political advisor Wu Weiren
- US fails to get China to back UN text against North Korea missile 'violations'
- China needs Nasa, SpaceX hotline to avoid space collision scares, Chinese scholar says
- In-orbit construction of China's space station going smoothly
- China urges Japan to be cautious concerning nuclear sharing talks: spokesperson
- China presses US for transparency on Pentagon-run biolabs in Ukraine
- China's WS-15 turbofan engine undergoes tests, shows improved performance
- China's nuclear energy goals unlikely to be upended by safety concerns amid Russia's invasion of Ukraine
- China, U.S. agree to 'manage differences' in Yang-Sullivan talk
- China tests rocket engine for upcoming space lab launches
- Chinese scientists hail space radar breakthrough
- China Focus: China's space station to support large-scale scientific research
- China opposes all biological weapons programs - UN envoy
- Chinese nuclear power operator supplies more electricity
- 3D printing speeds up production of missiles

D. Pakistan

- IAEA Mission Says Pakistan's Regulatory Body Effective, Encourages Continued Focus on Radioactive Waste Management
- Pakistan Air Force inducts 6 Chinese J-10CE jets

E. Europe

- Belarus has no plans to deploy nuclear weapons, Lukashenko says

F. Ukraine

- U.N. nuclear watchdog loses touch with monitoring equipment at Ukraine power plant
- Update 16 - IAEA Director General Statement on Situation in Ukraine
- What a power cutoff could mean for Chernobyl's nuclear waste

- Update 17 - IAEA Director General Statement on Situation in Ukraine
- Update 18 - IAEA Director General Statement on Situation in Ukraine
- Update 19 - IAEA Director General Statement on Situation in Ukraine
- Update 20 - IAEA Director General Statement on Situation in Ukraine
- Update 22 - IAEA Director General Statement on Situation in Ukraine
- Update 23 - IAEA Director General Statement on Situation in Ukraine
- Update 24 - IAEA Director General Statement on Situation in Ukraine
- US-run Ukraine project eyed causing harm via unchecked bird flu, food risks, says Russia
- Ukrainian bio laboratories received \$32 mln of funding from US - Russian Defense Ministry
- Update 26 - IAEA Director General Statement on Situation in Ukraine

G. Germany

- Germany to buy US-made F-35s capable of carrying nuclear weapons

H. United Kingdom

- Nuclear convoy 'carrying several warheads' travels 400 miles to UK arms depot

I. United States of America

- Nuclear convoy 'carrying several warheads' travels 400 miles to UK arms depot
- Hypersonic missile failures cast doubt on US bid to catch up with China and Russia
- U.S. Blasts Russia Claims of Bioweapons Labs in Ukraine: 'Absurd,' 'Laughable'
- US nuclear forces chief 'very concerned' by Russia-China cooperation
- U.S. Fights Bioweapons Disinformation Pushed by Russia and China
- U.S. accuses Russia of violating nuclear safety principles in Ukraine
- US Department of Energy detects no signs of radiation release in Ukraine - head
- US doesn't see any specific signs Russia could use chemical weapons in Ukraine - Pentagon
- After four decades and \$200 billion, the US missile defense system is no match for a Russian nuclear attack
- What are Switchblade drones, the kamikaze 'killer' drones Biden is sending to Ukraine?
- Putin Likely to Make Nuclear Threats If War Drags, U.S. Says
- US Says Iran Nuclear Deal Is Neither Imminent Nor Certain

West Asia

J. Iran

- Iran launches second military satellite into space
- Raisi admin. determined to develop aerospace industry
- Tehran agrees to hiatus in Iran Nuclear Deal talks in Vienna - Foreign Ministry
- Israeli center hit with Iranian ballistic missiles
- IRGC Forces Capture Members of Sabotage Group at Fordow
- IRGC Sets Up Nuclear-Security And Protection Command Center
- Iran's IRGC launches smart submarines
- Lavrov says Russia has received U.S. guarantees over JCPOA
- Iran among world leaders in nanotechnology

K. Saudi Arabia

- Saudi Arabia, UAE leaders not returning Biden's calls, disappointed with US - report
- Arab States Strengthen Cooperation in Nuclear Medicine and Science
- Saudi announces establishing Saudi Nuclear Energy Holding Company

L. Israel

- UAE, Israel press US for security guarantees if new Iran deal is signed, report says
- Iran could use nuclear deal to fund terrorist militias, Israeli diplomat warns

M. Turkey

- Turkey no longer considering purchase of Patriot missile systems from US

N. East Asia

- Singapore explores tapping nuclear energy by 2050
- Duterte's push for nuclear energy leads to PH-US tie-up

O. Japan

- Ukraine envoy to Japan says Putin may be willing to use nuclear weapons
- As Fukushima memory fades, Japan's nuclear power proponents hope for reset
- No Safety Concern at Nuclear Power Plants After Powerful Earthquake, Japan Informs IAEA
- Japan no to withdraw from nuclear cooperation agreement with Russia - PM

P. North Korea

- North Korea could return to ICBM, nuclear tests this year, U.S. intelligence report
- North Korea reactivating closed nuclear test site, satellite images suggest
- North Korea fires missile but launch fails, says South

Q. Africa

- Nigeria moving ahead on nuclear power plant plan

R. Australia

- Sydney ruled out as nuclear submarine base - despite topping list of sites in Defence study

S. Opinions

- The Final Push for U.S. Chemical Weapons Demilitarization
- Ukraine war: Could Russia use tactical nuclear weapons?
- How invasion of Ukraine could transform nuclear landscape of Asia
- Putin's War Is a Death Blow to Nuclear Nonproliferation
- The Smaller Bombs That Could Turn Ukraine Into a Nuclear War Zone
- Russia's Anti-Satellite Weapons: An Asymmetric Response to U.S. Aerospace Superiority
- Putin's Assault on Ukraine and the Nonproliferation Regime
- Addressing the Iranian Missile Threat: A Regional Approach to Risk Reduction and Arms Control
- The effect of AUKUS on India's foreign and defence policies

A. India

Indian test reactor reaches operation landmark

World Nuclear News, March 8, 2022

India's fast breeder test reactor (FBTR) has reached its full 40 MWt design power level for the first time, more than 35 years since it first started operating. The test reactor, which has an underpinning role in India's preparation for a thorium-based closed fuel cycle, had previously been limited to 32 MWt. FBTR is one of two civil research reactors at the Indira Gandhi Centre for Atomic Research (IGCAR) at Kalpakkam. Based on the French Rapsodie-type reactor, the sodium-cooled unit first started up at 10.5 MWt in 1985, and according to the IGCAR was the first in the world to use mixed plutonium uranium carbide as a driver fuel. In 2005, the fuel cycle for the FBTR was closed, with the reprocessing of 100 GWd/t fuel - claimed as a world first. The power was gradually increased, but limited to a maximum of 32 MWt which it reached in 2018. In 2011 it was announced that FBTR was to undergo a 20-year lifetime extension, to 2030, to carry out large-scale irradiation of the advanced metallic fuels and core structural materials required for the next generation fast reactors.

<https://www.world-nuclear-news.org/Articles/Indian-test-reactor-reaches-operation-landmark>

Statement on accidental firing of missile

Press Information Bureau, March 11, 2022

On 9 March 2022, in the course of a routine maintenance, a technical malfunction led to the accidental firing of a missile. The Government of India has taken a serious view and ordered a high-level Court of Enquiry. It is learnt that the missile landed in an area of Pakistan. While the incident is deeply regrettable, it is also a matter of relief that there has been no loss of life due to the accident.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1805148>

Ministry of Defence identifies 18 major platforms for industry led Design and Development

Press Information Bureau, March 11, 2022

In a significant boost to Prime Minister Shri Narendra Modi's vision on 'Aatmanirbhar Bharat Abhiyan', and in sync with the announcement in the Union Budget 2022-23 that allocated 25% of Defence R & D Budget for industry led R & D, 18 major platforms have been identified by the Ministry of Defence for industry led Design & Development under various routes. The list is as follows: Hypersonic Glide Vehicle, Directed Energy Weapons (300 KW and more), 127 mm Guided Projectile, etc. Under the Defence Acquisition Procedure 2020, 'Make' Category aims to achieve self-reliance by involving greater participation of Indian industry. Projects involving design and development of equipment, systems, major platforms or upgrades thereof by the industry can be taken up under this category. For Projects under Make-I sub-category, Ministry of Defence will provide financial support up to 70% of total cost of prototype development.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1805135>

India wary of China setting up Bangladesh missile maintenance hub

Nikkei Asia, March 11, 2022

With China preparing to set up a maintenance facility in Bangladesh for surface-to-air missile systems it supplied in 2011, alarm bells are ringing in New Delhi.

The deal on the maintenance hub has not been officially announced either by Beijing and Dhaka, but a senior Bangladeshi diplomat confirmed to Nikkei Asia that the two countries have reached agreement on the facility. He said, "Beijing and Dhaka want to keep this development under wraps currently as China is under

increasing scrutiny from the West – particularly the U.S. – for upsetting the security balance in Asia with its territorial aggression.” The facility, in which Chinese company Vanguard is a partner, is part of a raft of Chinese military-related investments and supplies going to Bangladesh that also includes warships, naval guns, anti-ship missiles and surface-to-air missile systems themselves.

<https://asia.nikkei.com/Politics/International-relations/India-wary-of-China-setting-up-Bangladesh-missile-maintenance-hub>

Missile accidentally fired ‘during inspection’ at secret IAF base, Pakistan ‘didn’t track’

The Print, March 12, 2022

The unarmed BrahMos supersonic missile – a practice version – that was launched into Pakistani territory Wednesday, is understood to have been accidentally fired during an inspection at a secret satellite base of the Indian Air Force (IAF). Sources in the defence and security establishment told ThePrint that – contrary to Pakistan’s claims of the missile suddenly veering off from its flight path to Rajasthan’s Mahajan Field Firing Range from Haryana’s Sirsa and heading towards its territory – it followed the trajectory that it would have in case of a conflict, but “certain factors” played a role in ensuring that any pre-fed target was out of danger.

<https://theprint.in/defence/missile-accidentally-fired-during-inspection-at-secret-iaf-base-pakistan-didnt-track/870814/>

India To Expand BrahMos Missiles’ Range Up To 800km In Upgraded Air Launch Version

Republic World, March 13, 2022

In the latest development, it is being reported that India is working on upgrading one of the country’s finest tactical ballistic missiles, BrahMos, to develop a new air-launched version of the supersonic cruise missile in order to further expand its capabilities to destroy the enemy up to a range of 800 kilometres. As per ANI sources,

“The range of the BrahMos missile has been increased already and with the advantage of being airborne at high altitudes, the missile can travel a longer distance and can hit targets at 800km and beyond.”

<https://www.republicworld.com/india-news/general-news/india-to-expand-brahmos-missiles-range-up-to-800km-in-upgraded-air-launch-version-articleshow.html>

Indian engineering firms mark steam generator milestones

World Nuclear News, March 14, 2022

Two Indian engineering companies - Bharat Heavy Electricals Limited (BHEL) and Larsen & Toubro (L&T) - have held “flagging off” ceremonies for steam generators destined for installation at Indian-designed 700 MWe pressurised heavy water reactors (PHWRs). BHEL marked the dispatch from its plant in Tamil Nadu of the 42nd nuclear steam generator to be made by the company. The component is destined to be installed at Nuclear Power Corporation of India Ltd (NPCIL)’s Rajasthan nuclear power plant. The steam generator flagged off by L&T from its Hazira complex in Gujarat is the fourth to be made for the PHWRs that are planned for construction at Gorakhpur, and was completed six months ahead of schedule, the company said.

<https://www.world-nuclear-news.org/Articles/Indian-engineering-firms-mark-steam-generator-mile>

Government plans on AMCA

Press Information Bureau, March 14, 2022

Process for obtaining Cabinet Committee on Security’s (CCS) approval for design and prototype development of Advanced Medium Combat Aircraft (AMCA) has been initiated. 5th Generation fighter aircraft, due to very special features, are costlier than 4th Generation fighter aircraft. Since AMCA is an indigenous 5th Generation aircraft, it is less costlier than similar aircraft available outside. This information was given by Raksha Rajya

Mantri Shri Ajay Bhatt in a written reply to Smt Shanta Chhetri in Rajya Sabha on March 14, 2022.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1805742>

ISRO successfully conducts ground test of solid booster stage for SSLV

The Indian Express, March 15, 2022

THE INDIAN Space Research Organisation (ISRO) on Monday successfully completed the ground test of the solid-fuel based booster stage (SS1) of its new Small Satellite Launch Vehicle (SSLV), completing the ground testing of all three stages of the launch vehicle. The new launch vehicle is now ready for its first development flight, which is scheduled for May this year. "The successful test of solid booster stage has given sufficient confidence to proceed with the first developmental flight of SSLV (SSLV-D1), which is scheduled in May 2022. The remaining stages of SSLV i.e. SS2 & SS3 stages have successfully undergone necessary ground tests and are ready for integration," the space agency said in a statement.

<https://indianexpress.com/article/india/isro-successfully-conducts-ground-test-of-solid-booster-stage-for-sslv-7820099/>

B. Russia

Ukraine worked on development of biological weapons near Russian borders - statement

TASS, March 8, 2022

During the special operation in Ukraine, Russia obtained documents proving that Ukrainian biological laboratories located near Russian borders worked on development of components of biological weapons, Russian Foreign Ministry spokeswoman Maria Zakharova said in a statement Tuesday. "We confirm the facts, discovered during the special military operation in Ukraine, of the emergency cleanup by the Kiev regime of traces of the military biological program, carried out by Kiev with funding from the US Department

of Defense," the statement reads. "Documents were obtained from employees of Ukrainian biological laboratories about emergency disposal of particularly dangerous pathogens of plague, anthrax, tularemia, cholera and other deadly diseases, carried out on February 24. In particular, we are talking about the Ukrainian Health Ministry order on prompt disposal of all stockpiles of dangerous pathogens, sent to all bio laboratories."

<https://tass.com/politics/1418689>

Ukraine gets air situation data from Å-3Å planes in Poland's air space – Russian ministry

TASS, March 9, 2022

Ukraine gets air situation data from Å-3Å planes that keep watch in Poland's air space, Defense Ministry Spokesman Igor Konashenkov said on Wednesday. The planes are part NATO's Airborne Warning and Control System, also known as AWACS, he said. "The leadership of the Ukrainian armed forces is trying to make up for the lack of information about the air situation by obtaining data at the air force command post in Vinnitsa from E-3A aircraft that are part of NATO's AWACS system," the spokesman said. According to Konashenkov, these aircraft are on round-the-clock duty in Poland's airspace.

<https://tass.com/defense/1419223>

Situation at Chernobyl NPP under joint control – Russian diplomat

TASS, March 9, 2022

The situation at the Chernobyl nuclear power plant is controlled jointly by Russian troops, Ukrainian specialists and the National Guard, Russian Foreign Ministry Spokeswoman Maria Zakharova said on Wednesday. "Currently, control over the situation at the Chernobyl NPP is being exercised jointly by Russian servicemen, Ukrainian specialists, the plant's civilian personnel, and that country's National Guard," she said, adding that Ukraine's

allegations about 20-fold radiation increase at the Chernobyl plant are not true.

<https://tass.com/politics/1419025>

Russia notifies OPCW of Ukraine's plans to stage provocation at Kharkov's nuclear reactor

TASS, March 10, 2022

Alexander Shulgin, Russia's Permanent Representative to the Organization for the Prohibition of Chemical Weapons (OPCW), informed the organization about Ukraine's plans to arrange a provocation at an experimental nuclear reactor in Kharkov. "At the plenary session yesterday, I touched upon the provocation which is being readied at the experimental [nuclear] reactor in Kharkov," he said on the Rossiya-24 news channel on Wednesday. In addition, Shulgin said that he had told the OPCW about the attempts of Ukrainian sabotage groups to break into the Zaporozhye nuclear power plant. In his opinion, a disaster might have occurred there, but was thwarted thanks to the Russian military.

<https://tass.com/politics/1419419>

Ukraine's possible creation of nuclear bomb was a motive for Russia to launch operation

TASS, March 10, 2022

A possibility of Ukraine manufacturing the so-called dirty nuclear bomb was one of the reasons for Russia to launch a special military operation in this country, said Konstantin Gavrillov, who heads the Russian delegation at the Vienna talks on military security and arms control, during a live broadcast of the Solovyov Live YouTube channel on Thursday. "One of the motives for Russia to launch a special operation was a threat of emergence of a 'dirty' nuclear bomb. Not only 'dirty' because, as our authorities claim, they [Ukraine] had and still have technologies and it was only a matter of time," he said.

<https://tass.com/politics/1419599>

IAEA chief holds 'constructive' talks with Russia's Lavrov

World Nuclear News, March 10, 2022

The director general of the International Atomic Energy Agency (IAEA), Rafael Mariano Grossi, held talks in Turkey with Ukraine's foreign minister and Russia's foreign minister and said "we are making progress on the safety and security of nuclear facilities in Ukraine". The director general flew to Antalya in Turkey on Thursday morning at the invitation of Turkey's Foreign Minister Mevlüt Çavuşoğlu. He held separate meetings with Dmytro Kuleba, Ukraine's foreign minister, and his Russian counterpart Sergei Lavrov. Following the meetings, Grossi posted pictures of the talks, giving an upbeat update: "Constructive and important meeting with Sergei Lavrov in Antalya, Turkey, this afternoon. We are making progress on the safety and security of nuclear facilities in Ukraine." "Important and forward-looking conversations with Dmytro Kuleba today in Antalya, Turkey. Progress being made on the safety and security of nuclear facilities in Ukraine."

<https://www.world-nuclear-news.org/Articles/IAEA-chief-in-Turkey-for-talks-on-Ukraine-nuclear>

US studied spread of infections via migrating birds in Ukrainian labs – Defense Ministry

TASS, March 10, 2022

Russian Defense Ministry obtained information about US Project UP-4 on research of particularly dangerous infections of migrating birds, including H5N1 flu and Newcastle disease, which had been developed in Ukrainian biological laboratories, head of Russian Nuclear, Chemical and Biological Protection Troops Igor Kirillov said Thursday. According to Kirillov, Russian Defense Ministry continues to study the materials on military biological programs, carried out by the US and its NATO allies in Ukraine, and the data obtained from various

sources confirm the leading role of the US Department of Defense's Defense Threat Reduction Agency (DTRA) in funding and carrying out military biological researches in Ukraine. "We've discovered details about Project UP-4, implemented with involvement of laboratories in Kiev, Kharkov, Odessa, and planned for period until 2020. The project's goal was to research a potential of spread of particularly dangerous infections via migrating birds, including the highly pathogenic H5N1 flu, whose lethality for humans can reach 50%, as well as Newcastle disease," Kirillov said.

<https://tass.com/politics/1419999>

Belarusian power engineers provide Chernobyl NPP with electricity – official

TASS, March 10, 2022

Belarusian power engineers have provided electricity to the Chernobyl nuclear power plant (NPP), which is currently under the control of the Russian Armed Forces. The electrical transmission line to Mazyr has been energized, Russia's Deputy Minister of Energy Evgeniy Grabchak told journalists. "Belarusian power engineers have provided electricity to the Chernobyl nuclear power plant, which is under the control of the Armed Forces of the Russian Federation. The power transmission line to Mazyr has been energized. The work of operational personnel of the Chernobyl Nuclear power plant made it possible to supply voltage to the electrical installations of the power plant," Grabchak said.

<https://tass.com/politics/1420017>

US evacuated documents, biomaterials from Ukrainian bio labs to Lvov, Poland – statement

TASS, March 10, 2022

The US has already managed to evacuate most documents and biological materials from biological laboratories in Kiev, Kharkov and Odessa to Lvov and Poland, says Igor Kirillov, head of Russian Nuclear, Chemical

and Biological Protection Troops. "According to the available information, the Americans have already managed to evacuate most documents, including databases, as well as biological materials and equipment from laboratories in Kiev, Kharkov and Odessa to the Lvov Research Institute of Epidemiology and Hygiene, and to the US consulate in Lvov. A relocation of a part of the collection to the Polish territory is possible," he said.

<https://tass.com/politics/1420053>

Nuclear war is impossible – Russian MFA

TASS, March 10, 2022

A nuclear war is impossible because it will mean the end of civilization, Igor Vishnevetsky, deputy director of the nonproliferation and arms control department at the Russian Foreign Ministry, said during a discussion at the Valdai Club. "This kind of war is impossible," he said. "Many specialists and experts understand what could be the consequences of a nuclear war." Vishnevetsky said a nuclear war can't happen "by definition." "It's the end of civilization and it can't be allowed in any means."

<https://tass.com/politics/1420073>

Russia requests Security Council meeting on US biological programs in Ukraine - diplomat

TASS, March 11, 2022

Russia has requested holding a UN Security Council meeting on Friday, March 11, to discuss US military biological programs in Ukraine, Russian First Deputy Permanent Representative to the UN Dmitry Polyansky said. "Russian Mission asked for a meeting of Security Council for 11 March to discuss the military biological activities of the US on the territory of Ukraine," he wrote on Twitter.

<https://tass.com/world/1420307>

Russian drone eliminates Ukrainian multiple rocket launcher from altitude of 3,000 meters

TASS, March 13, 2022

An unmanned aerial vehicle of Russia's aerospace force has eliminated a Ukrainian multiple rocket launcher, the Russian Defense Ministry said in a news release on Sunday. "The multiple rocket launcher was destroyed by an unmanned aerial vehicle of Russia's Aerospace Force with a smart weapon from an altitude of more than 3,000 meters," the Defense Ministry said. In the special military operation the drones are being used for reconnaissance and fire adjustment and for attacking targets.

<https://tass.com/defense/1421391>

Rosatom denies plans of full control over Zaporozhye NPP – IAEA

TASS, March 13, 2022

Rosatom Director General Alexey Likhachev has assured the International Atomic Energy Agency (IAEA) that Russia had no plans of taking Ukraine's Zaporozhye nuclear power plant (NPP) under full control. "Ukraine has told IAEA: Russia plans to take full and permanent control of Zaporizhzhya Nuclear Power Plant under Rosatom management," the organization said in a Twitter post on Sunday night. "Rosatom Director General in call with IAEA Chief Rafael Grossi denied such intention." Likhachev also "denied that Rosatom had taken operational control nor that it intended for the plant to be under Rosatom's 'management system,'" the organization said.

<https://tass.com/world/1421311>

Russia Deploys a Mystery Munition in Ukraine

The New York Times, March 14, 2022

American intelligence officials have discovered that the barrage of ballistic missiles Russia has fired into Ukraine contain a surprise: decoys that trick air-defense radars and fool heat-seeking missiles. The devices are each about a foot long, shaped

like a dart and white with an orange tail, according to an American intelligence official. They are released by the Iskander-M short-range ballistic missiles that Russia is firing from mobile launchers across the border, the official said, when the missile senses that it has been targeted by air defense systems.

<https://www.nytimes.com/2022/03/14/us/russia-ukraine-weapons-decoy.html>

U.N. Secretary General Warns of Possibility of Nuclear War amid Russian Invasion

National Review, March 14, 2022

The United Nations Secretary General warned Monday about the possibility that the Ukraine-Russia crisis could escalate into nuclear war. "Raising the alert level of Russian nuclear forces is a bone-chilling development," António Guterres told reporters on Monday, Reuters first reported. "The prospect of nuclear conflict, once unthinkable, is now back within the realm of possibility." Guterres urged negotiation and reconciliation, noting the fallout that Ukrainian civilians have endured as a result of the Russian invasion.

"It's time to stop the horror unleashed on the people of Ukraine and get on the path of diplomacy and peace," he said. "The appeals for peace must be heard. This tragedy must stop."

<https://www.nationalreview.com/news/u-n-secretary-general-warns-of-possibility-of-nuclear-war-amid-russian-invasion/>

Kiev's intent to develop nuclear weapons was a real threat – Putin

TASS, March 16, 2022

The threat of Ukraine's development of nuclear weapons was real, Russian President Vladimir Putin said Wednesday. "The Kiev authorities made statements of intent to develop their own nuclear weapons and delivery systems. It was a real threat," the Russian leader said. According to Putin, "the Nazi Kiev regime

could have obtained, with foreign technical assistance, weapons of mass destruction in the foreseeable future, and Russia would, of course, be their target.”.

<https://tass.com/politics/1423099>

Russia backs down on demands in Iran nuclear deal talks, making revival of 2015 pact imminent

CNBC, March 18, 2022

Russia has walked back its threat to torpedo the revival of the 2015 Iranian nuclear deal over recent sanctions imposed over its invasion of Ukraine, reopening the way to an agreement after nearly a year of talks. The parties involved in the pact, formally known as the Joint Comprehensive Plan of Action, or JCPOA, were reportedly close to reaching a deal in Vienna until the U.S. and EU imposed sweeping sanctions on Russia over its invasion of Ukraine. Moscow then demanded that future trade with Iran not be impacted by Western sanctions, prompting the talks to be suspended last week. Russian Foreign Minister Sergei Lavrov said Tuesday that he had “received written guarantees” from the U.S. that its demands would be met, meaning the talks will likely proceed.

<https://www.cnbcm.com/2022/03/18/russia-backs-down-on-demands-in-iran-nuclear-deal-talks-making-revival-of-2015-pact-imminent.html>

Sevmash shipyard to build fifth-generation nuclear subs after upgrade - chief

TASS, March 19, 2022

The technological upgrade of the Sevmash shipyard in northern Russia will enable it to build fifth-generation nuclear-powered submarines, the plant’s CEO Mikhail Budnichenko has told TASS. “Resolving the global task of upgrading to the new technical level will allow us not just to build fifth-generation submarines and other naval equipment boosting defense capabilities and economic potential of our country, but also to solve other possible tasks for the shipyard,” he said, adding that a large-scale technical upgrade was underway at the

facility. Budnichenko added that the enterprise was preparing to introduce the modular method of submarine construction.

<https://tass.com/defense/1424415>

Russia’s mission informs IAEA about situation at Zaporozhskaya, Chernobyl NPPs

TASS, March 19, 2022

The radiation background at the Zaporozhskaya and Chernobyl nuclear plants in Ukraine is within the norm, Russia’s mission to the Vienna-based international organizations said on Saturday. The mission tweeted that it has sent a verbal note with the International Atomic Energy Agency (IAEA) “with updated information regarding the situation at Chernobyl and Zaporozhskaya NPPs.” According to the mission, the radiation situation at these facilities is normal. “It continues to be monitored by automatic radiation monitoring systems. The management of the two NPPs on a permanent basis sends information on the status of the radiation situation to the regulatory body of Ukraine (SNRIU),” it said, adding that electricity supplies “to the Chernobyl nuclear power plant from Ukraine has not yet been restored.”

<https://tass.com/politics/1424589>

Admiral Nakhimov missile cruiser to be armed with 4th generation weapons

TASS, March 21, 2022

The heavy nuclear-powered guided missile cruiser The Admiral Nakhimov (Project 11442M Orlan), currently undergoing a refit and repairs at the Sevmash shipyards (an affiliate of the United Shipbuilding Corporation, USC) will be rearmed with fourth generation weapons, the USC said on the occasion of its 15th anniversary. “The ship’s outdated systems and weapons will be replaced with new generation ones, which by their parameters are worthy of the image of a

fourth generation vessel and the fleet's flagship," the USC said.

<https://tass.com/defense/1425025>

Strike by Kinzhal missile in Ukraine confirmed its efficiency – Defense Ministry

TASS, March 21, 2022

The combat use of the Kinzhal air-to-surface missile in Ukraine confirmed its efficiency in destroying hard targets, Russian Defense Ministry Spokesman Major General Igor Konashenkov told reporters on Monday. "The combat use of the Kinzhal air-launched missile system has confirmed its effectiveness in destroying highly protected special enemy targets," he said. "Strikes by this air-launched missile system at military infrastructure facilities of Ukraine during the special military operation will continue." The Kinzhal missile is used with a conventional warhead, the spokesman said.

<https://tass.com/defense/1425271>

Newly-built, upgraded Tupolev-160 bombers to be delivered 2022 – deputy prime minister

TASS, March 22, 2022

One newly-built and one upgraded strategic missile-carrying bomber Tupolev-160 will be delivered this year, Deputy Prime Minister Yury Borisov told the media during a working trip to the Gorbunov Aviation Plant in Kazan (an affiliate of Tupolev PAO). "Also, we carried out an inspection and synchronized watches regarding the production of combat aircraft. As is known, Kazan plant is the main manufacturer of strategic planes for the Aerospace Force. Everything proceeds in accordance with the original schedule. This year we expect to have one upgraded and one newly-built Tupolev-160. The way I see it, the plant is fully ready for production," he said.

<https://tass.com/defense/1425615>

Keel-laying ceremonies for two Lada project subs due this year – corporation

TASS, March 22, 2022

Keel-laying ceremonies for two multi-role diesel-electric submarines of project 677 (Lada series) will be held at the Admiralty Shipyards (an affiliate of the United Shipbuilding Corporation, USC) later this year, the USC told TASS on Tuesday at the company's exhibition at the State Duma timed for the company's 15th anniversary. The lead submarine of the Lada series, B-585 St. Petersburg joined the Northern Fleet and entered service in September 2021. A second submarine, B-586 Kronshtadt and third one, B-587 Velikiye Luki are to be handed over to the Navy in 2022. Project 677 belongs to the fourth generation of diesel-electric submarines, currently recognized as the most advanced non-nuclear subs in terms of combat effectiveness and other tactical and technical parameters.

<https://tass.com/defense/1425669>

C. China

China to carry out Phase-4 lunar probe missions before 2030, build permanent station by 2035: project chief designer and political advisor Wu Weiren

Global Times, March 8, 2022

China plans to conduct several landings on the south pole of the moon in its Phase-4 lunar program, in pursuit of building a basic structure of a lunar research station in the region, Global Times has recently learned from Wu Weiren, the chief designer of China's lunar exploration program. The Phase-4 of the national lunar probe program obtained state approval at the end of 2021, and would be carried out in three steps, namely the Chang'e-6, -7, and -8 missions before 2030, Wu, who is also a member of the Standing Committee of the National Committee of the Chinese People's Political Consultative Conference (CPPCC), the country's top political advisory body, detailed amid the ongoing two

sessions. The research and development of the three missions, according to Wu, the key figure of national deep space exploration program, were very smooth.

<https://www.globaltimes.cn/page/202203/1254281.shtml>

US fails to get China to back UN text against North Korea missile 'violations'

South China Morning Post, March 8, 2022

The US and European allies on the United Nations Security Council failed Monday to convince China and Russia to back a text noting North Korea's "violations" of resolutions on missile technology. North Korean state media said Pyongyang carried out a test Saturday for what it said was a reconnaissance satellite, but which analysts said was a thinly veiled ballistic missile launch, just days before a presidential election in South Korea. "We would love to have China and Russia join us in this room" to adopt the text, US Ambassador to the UN Linda Thomas-Greenfield told Agence France-Presse after a closed-door Security Council meeting.

<https://www.scmp.com/news/asia/east-asia/article/3169621/us-fails-get-china-back-un-text-against-north-korea-missile>

China needs Nasa, SpaceX hotline to avoid space collision scares, Chinese scholar says

South China Morning Post, March 9, 2022

China should consider setting up communication mechanisms with SpaceX and Nasa - even a hotline - to avoid collisions in outer space, a Chinese scholar has advised. Wu Riqiang, associate professor at Renmin University's School of International Studies, also rejected the theory that the US military tried to spy on China when SpaceX's Starlink satellites came too close to the Chinese space station in July and October. Rather, the near-collision with the satellites - operated by tech billionaire Elon Musk's SpaceX aerospace company - were "more like incidental technical accidents", said Wu, a former

missile engineer with the China Aerospace Science and Industry Corporation. His analysis was part of an article published in the latest edition of World Affairs, a journal affiliated to the Chinese foreign ministry.

<https://www.scmp.com/news/china/diplomacy/article/3169849/china-needs-nasa-spacex-hotline-avoid-space-collision-scares>

In-orbit construction of China's space station going smoothly

Xinhua, March 12, 2022

Construction work on the core module of China's Tiangong space station is proceeding steadily, the China Manned Space Agency (CMSA) said on Friday. The Shenzhou-13 mission astronauts currently working the project are all in good condition, said the CMSA, adding that they plan to return to Earth in April. The key technologies for the construction of the space station have been fully verified, and the follow-up missions are on course to make solid progress, the CMSA added. Building a space station for large-scale, long-term manned missions is the third step in the "three-step" development strategy of China's manned spaceflight project. Since 2021, the country has successfully carried out five flight missions in the key technology verification phase of its manned spaceflight project.

<https://english.news.cn/20220312/64c5403ea5984db68cd486c42abdb05b/c.html>

China urges Japan to be cautious concerning nuclear sharing talks: spokesperson

Xinhua, March 14, 2022

China on Monday expressed serious concern over discussions on a nuclear sharing arrangement that would see Japan host U.S. nuclear weapons, and urged Japan to be cautious. Foreign Ministry spokesperson Zhao Lijian made the remarks at a daily press briefing when asked to comment on relevant voices from Japan. As a non-nuclear weapon state party to the Treaty on the Non-

Proliferation of Nuclear Weapons (NPT), Japan should earnestly fulfill its international obligations in this regard, Zhao said, noting that China has always opposed the deployment of nuclear weapons by nuclear-weapon states on the territory of other countries. "For historical reasons, relevant movements of the Japanese side in the field of military security have always attracted great attention," the spokesperson said. Zhao said that in recent days, there have been continuous and dangerous comments in Japan that violate the country's three non-nuclear principles.

<https://english.news.cn/asiapacific/20220314/90c2c383f4344dd292b1f02feb34db2c/c.html>

China presses US for transparency on Pentagon-run biolabs in Ukraine

TASS, March 14, 2022

China's authorities have urged the US to demonstrate transparency on the recently-unearthed biological laboratories in Ukraine, Chinese Foreign Ministry Spokesman Zhao Lijian told a briefing on Monday. "Military biological activity in Ukraine has raised alarm throughout the global community," the diplomat insisted.

According to the recently publicized data, "there are dozens of biolabs in Ukraine that operate under the instructions of the US Department of Defense," Zhao Lijian said, stressing that "the US poured over \$200 million into these labs". "The Americans have always trumpeted what they call openness and transparency," he went on to say. "If the Americans claim that this information is false, then why not publish detailed information and thereby prove their integrity?" he asked.

<https://tass.com/world/1421689>

China's WS-15 turbofan engine undergoes tests, shows improved performance

Global Times, March 14, 2022

The WS-15, China's next generation turbofan engine expected to be used on the J-20 stealth fighter jet to greatly improve its performance, has undergone several tests

that saw the engine further improved and optimized, the state broadcaster recently reported. After the large scale equipment of the WS-10, China's first independently developed high performance, high thrust turbofan engine with afterburner, on Chinese fighter jets including the J-10, the J-11 and the J-20 since 2016, the country's next generation turbofan engine, the WS-15, has undergone several tests, China Central Television (CCTV) reported on Sunday. Developed for fifth-generation heavy and medium fighter jets, the WS-15 has a low bypass ratio and is capable of thrust vector control, CCTV said. With the tests, all parameters of the WS-15 have been further improved and optimized, the CCTV reported, noting that the more powerful WS-15 is expected to replace the WS-10 for the J-20 in the future, so the J-20 will finally become its ultimate form.

<https://www.globaltimes.cn/page/202203/1254846.shtml>

China's nuclear energy goals unlikely to be upended by safety concerns amid Russia's invasion of Ukraine

South China Morning Post, March 15, 2022

Beijing is expected to stand firm on developing China's nuclear energy capabilities as part of its decarbonisation push, despite security concerns triggered by the Russian invasion of Ukraine. Beijing's nuclear energy push comes as decarbonisation pressures and security concerns sparked by Russia's invasion lead to debate and soul searching among other major nuclear powers. For instance, in response to Russia's invasion, officials in Germany proposed extending the lifespan of its nuclear power plants to ensure energy security, although this suggestion was later turned down. China is expected to build around eight new nuclear reactors a year between last year and 2025 to meet its 2060 carbon-neutral goal, according to its 14th five-year development plan.

<https://www.scmp.com/business/article/3170548/chinas-nuclear-energy-goals-unlikely-be-upended-safety-concerns-amid>

China, U.S. agree to 'manage differences' in Yang-Sullivan talk

China Military Online, March 15, 2022

China and the U.S. should strengthen dialogue and cooperation, properly manage differences and prevent conflict and confrontation under the current international situation, senior Chinese diplomat Yang Jiechi said when meeting with U.S. National Security Advisor Jake Sullivan on Monday in Rome, the capital of Italy. According to the Chinese Foreign Ministry, the two diplomats had "candid, in-depth and constructive communication" on bilateral ties and "the Ukraine issue, the Korean Peninsula nuclear issue, the Iran nuclear issue and the Afghanistan issue."

http://www.81.cn/jwywpc/2022-03/15/content_10141067.htm

China tests rocket engine for upcoming space lab launches

China Daily, March 16, 2022

A Chinese high-thrust oxyhydrogen rocket engine has completed a 520-second test in preparation for the upcoming launches of space station lab modules, its maker said on Wednesday. Developed by the China Aerospace Science and Technology Corporation, the engine is designed for the core stage of the Long March-5 carrier rocket series, which will be used to launch two lab modules of China's orbiting Tiangong space station this year. The long-range test, lasting 520 seconds, has verified the reliability of the engine, and there will be more than 20 experimental tasks that the rocket engine will undergo to further test its performance, the company disclosed. China plans to have six more missions, including the launch of the Wentian and Mengtian lab modules, two cargo spacecraft and two crewed spaceships, in 2022 to complete the construction of the space station.

<https://global.chinadaily.com.cn/a/202203/16/WS6231a64fa310fd2b29e514fd.html>

Chinese scientists hail space radar breakthrough

South China Morning Post, March 16, 2022

A team of Chinese military scientists say they have achieved a breakthrough in laser imaging technology that will allow ground stations to identify and track a target in space with unprecedented accuracy. The results suggest that the radar, developed by Professor Han Fei at the National University of Defence Technology in Anhui province, can take images of a thumb sized object in near-Earth orbit with a resolution of up to 3 millimetres (0.1 inches). This accuracy is two orders of magnitude higher than the best results achieved by similar devices in the United States and other Western countries, according to the researchers.

https://www.scmp.com/news/china/science/article/3170571/chinese-scientists-hail-space-radar-breakthrough?module=perpetual_scroll_0&pgtype=article&campaign=3170571

China Focus: China's space station to support large-scale scientific research

China Daily, March 18, 2022

China plans to conduct a number of frontier scientific experiments on its Tiangong space station, with the two laboratory modules, Wentian and Mengtian, scheduled to be launched this year, according to the Technology and Engineering Center for Space Utilization under the Chinese Academy of Sciences. The experiments include raising fish, growing vegetables, setting up the most precise clocks in space, developing new materials, studying physical laws and exploring how humans can survive in space for long periods. The scientific experiment facilities to be installed in the two lab modules are currently under development and will be launched into orbit on schedule to support large-scale and multidisciplinary scientific research, said the CSU. Scientists are also planning to establish the world's first space-based

cold atomic clock system in the Mengtian lab module, consisting of a hydrogen clock, a rubidium clock and an optical clock. "If successful, the cold atomic clocks will form the most precise time and frequency system in space, which should not lose one second in hundreds of millions of years," said Zhang Wei, director of the Utilization Development Center of CSU.

<https://global.chinadaily.com.cn/a/202203/18/WS6233e33ea310fd2b29e51b02.html>

China opposes all biological weapons programs - UN envoy

TASS, March 19, 2022,

China believes that under no circumstances should any country develop biological weapons, and opposes any research of this kind, Chinese Permanent Representative to the UN Zhang Jun has told the UN Security Council. "China resolutely opposes the development, possession or use of biological and chemical weapons by any country under any circumstance," he told the UN Security Council meeting on the military biological research in Ukraine. Apart from that, China urges all countries "to destroy their chemical weapons stockpiles as soon as possible."

<https://tass.com/world/1424389>

Chinese nuclear power operator supplies more electricity

Xinhua, March 19, 2022

China's leading nuclear power operator, CGN Power Co., Ltd., said on Friday that it sent 201.15 billion kWh of electricity to the power grid in 2021, an increase of 7.86 percent from the previous year. The company said the amount of electricity equals a reduction of 60.85 million tonnes of standard coal consumption, helping cut carbon dioxide emissions by 167.36 million tonnes. The company, which ran 25 nuclear power units in 2021, said its revenues for the whole of last year reached 80.68 billion yuan (about 12.7 billion U.S. dollars), up 14.3 percent year on year.

<https://english.news.cn/20220319/f9947e6d81784ce1a66423ba91806691/c.html>

3D printing speeds up production of missiles

People's Daily Online, March 21, 2022

China Aerospace Science and Industry Corp, the nation's largest missile maker, is taking advantage of additive manufacturing technology, commonly known as 3D printing, to accelerate the design and production of cruise missiles, engineers said. "It takes about one to two months for dozens of technicians and workers to manufacture a gas rudder (used on a cruise missile) with traditional machining methods because it involves a succession of processes like casting and welding," said Zhang Chunhu, a senior technician at CASIC's Third Academy. "And a rudder is only a small part on a missile, so you can imagine how much manpower and time it takes to build a whole cruise missile by traditional means. "But now, with 3D printing technology, a handful of workers can make a rudder within a week. The 3D-printing-enabled procedure can save us a great deal of labor, time and cost, and is much better than mechanical machining when it comes to weight and accuracy control for our products."

<http://en.people.cn/n3/2022/0321/c90000-9973827.html>

D. Pakistan

IAEA Mission Says Pakistan's Regulatory Body Effective, Encourages Continued Focus on Radioactive Waste Management

IAEA, March 9, 2022

An International Atomic Energy Agency (IAEA) mission said that new and updated nuclear safety regulations in Pakistan have significantly updated and strengthened nuclear and radiation safety in the country. The team also noted a few areas where challenges remain, including for Pakistan to continue to focus on decommissioning, spent fuel management and radioactive waste disposal. At the request of the Government of Pakistan, the Integrated Regulatory Review Service

(IRRS) team this week concluded an eight day follow-up mission to review the country's implementation of recommendations and suggestions made during an initial IRRS mission in 2014. The follow-up mission was hosted by the Pakistan Nuclear Regulatory Authority (PNRA). The team found that improvements in Pakistan's regulatory functions and activities had improved nuclear safety by enhancing the development of regulations and strengthening arrangements for regulatory inspections, authorizations, emergency preparedness and response, occupational radiation protection and environmental radiation monitoring.

<https://www.iaea.org/newscenter/pressreleases/iaea-mission-says-pakistans-regulatory-body-effective-encourages-continued-focus-on-radioactive-waste-management>

Pakistan Air Force inducts 6 Chinese J-10CE jets

China Daily, March 14, 2022

The Pakistan Air Force officially inducted its first batch of six J-10CE fighter jets at a ceremony on Friday at its Minhas Airbase in Kamra, Punjab, which was attended by Prime Minister Imran Khan and senior government officials and military commanders. The acquisition contract for the fighter jets was signed in June. Delivery of the first planes was completed in just eight months at unprecedented speed, a PAF announcer said at the ceremony.

<https://www.chinadaily.com.cn/a/202203/14/WS622e935da310cdd39bc8c573.html>

E. Europe

Belarus has no plans to deploy nuclear weapons, Lukashenko says

TASS, March 19, 2022

Belarus has no plans to develop or deploy nuclear weapons, President Alexander Lukashenko said Friday. "I have no plans to deploy nuclear weapons here, produce nuclear weapons here, develop or use these nuclear weapons against anyone. This has never been in my plans or plans of

Belarusian authorities," Lukashenko said in an interview for Japan's TBS, published by BelTA Friday. When asked whether these plans can change, should the situation deteriorate, Lukashenko said that it is unlikely.

<https://tass.com/world/1424333>

F. Ukraine

U.N. nuclear watchdog loses touch with monitoring equipment at Ukraine power plant

Reuters, March 9, 2022

The United Nations nuclear watchdog has lost touch with its remote systems that monitor nuclear material at the Zaporizhzhia nuclear power plant in Ukraine, it said on Wednesday. Zaporizhzhia, Europe's largest nuclear power plant, has been in Russian hands since last week, when a blaze broke out in a building at the site after clashes between Russian and Ukrainian forces. The International Atomic Energy Agency (IAEA) announcement came a day after it said the same thing had happened at the radioactive waste facilities at Chernobyl, near the defunct power plant that was the site of the world's worst nuclear disaster in 1986. IAEA chief Rafael Grossi is "concerned about the sudden interruption of such data flows to the IAEA's Vienna headquarters from the two sites, where large amounts of nuclear material are present in the form of spent or fresh nuclear fuel and other types of nuclear material," the IAEA said in a statement.

<https://www.reuters.com/world/europe/iaea-loses-touch-with-monitoring-equipment-ukraine-power-plant-2022-03-09/>

Update 16 - IAEA Director General Statement on Situation in Ukraine

IAEA, March 9, 2022

Ukraine informed the International Atomic Energy Agency (IAEA) today that the Chernobyl Nuclear Power Plant (NPP) had been disconnected from the electricity

grid and lost its supply of external power, two weeks after Russian forces took control of the site of the 1986 accident, Director General Rafael Mariano Grossi said. In the case of the Chernobyl NPP, however, he said the IAEA agreed with the Ukrainian regulator that its disconnection from the grid would not have a critical impact on essential safety functions at the site, where various radioactive waste management facilities are located. Specifically, regarding the site's spent fuel storage facility, the volume of cooling water in the pool is sufficient to maintain effective heat removal from the spent fuel without a supply of electricity. The site also has reserve emergency power supplies with diesel generators and batteries.

<https://www.iaea.org/newscenter/pressreleases/update-16-iaea-director-general-statement-on-situation-in-ukraine>

What a power cutoff could mean for Chernobyl's nuclear waste

Deccan Herald, March 10, 2022

Unlike an operating nuclear plant, which can use some of the electricity it generates to power its operation, the long-defunct Chernobyl plant in Ukraine is completely dependent on outside sources of electricity. As of Wednesday, Chernobyl, the scene of the worst nuclear disaster in history when one of its four reactors exploded and burned 36 years ago, is operating mainly on power from diesel generators. The IAEA said Wednesday that it saw "no critical impact on safety" at the complex. But what could happen if all these backups failed and Chernobyl was left with no power at all? The fuel inside a reactor eventually becomes used up and is replaced. As is common practice in the nuclear power industry, the fuel removed from all four Chernobyl reactors over the years, more than 20,000 assemblies in all, is stored in pools of water that dissipate the heat produced as the fuel decays radioactively. When fuel is newly removed from a reactor and is still highly radioactive, there is a lot of decay and thus a lot of heat, so plants need power to run pumps that circulate the storage water, removing excess heat in the process. If the water in storage tanks got so hot it boiled

off, the fuel would be exposed to the air and could catch fire. That, too, was among the risks in the Fukushima disaster.

<https://www.deccanherald.com/international/world-news-politics/what-a-power-cutoff-could-mean-for-chernobyl-s-nuclear-waste-1089903.html>

Update 17 - IAEA Director General Statement on Situation in Ukraine

IAEA, March 10, 2022

Ukraine informed the International Atomic Energy Agency (IAEA) that it had lost today all communications with the Chernobyl Nuclear Power Plant (NPP), the day after the Russian-controlled site lost all external power supplies, Director General Rafael Mariano Grossi said. The Director General said that the Agency is aware of reports that power has now been restored to the site and is looking for confirmation. Earlier in the day, the Ukraine regulatory authority had told the IAEA that emergency diesel generators were providing electricity to the Chernobyl NPP. The subsequent loss of communication meant that the regulator could no longer provide updated information about the site to the IAEA.

<https://www.iaea.org/newscenter/pressreleases/update-17-iaea-director-general-statement-on-situation-in-ukraine>

Update 18 - IAEA Director General Statement on Situation in Ukraine

IAEA, March 11, 2022

Ukraine has told the International Atomic Energy Agency (IAEA) that technicians have started repairing damaged power lines in an attempt to restore external electricity supplies to the site of the Russian-controlled Chernobyl Nuclear Power Plant (NPP) that were entirely cut earlier in the week, Director General Rafael Mariano Grossi said today. Ukraine's regulatory authority said work that began on the evening of 10 March had succeeded in repairing one section, but off-

site electrical power was still down, indicating there was still damage in other places. The repair efforts would continue despite the difficult situation outside the NPP site, it added.

<https://www.iaea.org/newscenter/pressreleases/update-18-iaea-director-general-statement-on-situation-in-ukraine>

Update 19 – IAEA Director General Statement on Situation in Ukraine

IAEA, March 12, 2022

Ukraine informed the International Atomic Energy Agency (IAEA) today that Russia was planning to take full and permanent control of the Zaporizhzhya Nuclear Power Plant (NPP) under the management of the state firm Rosatom, Director General Rafael Mariano Grossi said. This was later denied by the Russian Federation. The President of Ukraine's nuclear power plant operator Energoatom, Petro Kotin, said in a letter to the Director General that around 400 Russian soldiers were "being present full time on site" and confirmed that the NPP remains under the control of the Russian military forces' commander. In addition, Energoatom's Kotin said plant management were required to coordinate with the Russian forces on all operational issues, including technical matters.

<https://www.iaea.org/newscenter/pressreleases/update-19-iaea-director-general-statement-on-situation-in-ukraine>

Update 20 – IAEA Director General Statement on Situation in Ukraine

IAEA, March 13, 2022

Ukraine informed the International Atomic Energy Agency (IAEA) today that Ukrainian specialist teams had succeeded in repairing a power line needed to resume external electricity supplies to the Chornobyl Nuclear Power Plant (NPP), four days after they were completely lost at the Russian-controlled site, Director General Rafael Mariano Grossi said. The Director General received the news from the head of Ukraine's nuclear power company Energoatom, Petro Kotin, who told him that the specialists had fixed one

of two damaged lines and would now be able to deliver all required off-site power to the NPP, where various radioactive waste management facilities are located following the 1986 accident. Ukraine's regulator separately informed the IAEA that the power supply line was restored at 18:38 CET by the repair personnel of Ukrenergo, the country's transmission system operator. The Chornobyl NPP continues to work on back-up diesel generators and will be reconnected to the Ukrainian electricity grid in the morning, it said.

<https://www.iaea.org/newscenter/pressreleases/update-20-iaea-director-general-statement-on-situation-in-ukraine>

Update 22 – IAEA Director General Statement on Situation in Ukraine

IAEA, March 15, 2022

Ukraine informed the International Atomic Energy Agency (IAEA) today that the Chornobyl Nuclear Power Plant (NPP) had been re-connected to the national electricity grid and no longer relied on emergency diesel generators for power, Director General Rafael Mariano Grossi said. The site of the 1986 accident lost all off-site power on 9 March and was forced to resort to diesel fuel for back-up electricity. Ukrainian specialist teams succeeded on the weekend to repair one of two damaged lines linking the plant to the power network.

<https://www.iaea.org/newscenter/pressreleases/update-22-iaea-director-general-statement-on-situation-in-ukraine>

Update 23 – IAEA Director General Statement on Situation in Ukraine

IAEA, March 16, 2022

Ukraine informed the International Atomic Energy Agency (IAEA) today that the country's Zaporizhzhya Nuclear Power Plant (NPP) had lost connection to a third power line but that two others remained available and there was no

safety concern, Director General Rafael Mariano Grossi said. Ukraine's largest nuclear power plant has four high voltage (750 kV) offsite power lines plus one on standby. Two of the four were damaged earlier. The Ukrainian regulator said it was not clear what had caused today's loss of a third line. It said the remaining power line and the one on standby were sufficient to ensure that all safety systems remained fully functional without limitations. Like other NPPs in Ukraine and elsewhere, the plant also has back-up diesel generators in case they are needed.

<https://www.iaea.org/newscenter/pressreleases/update-23-iaea-director-general-statement-on-situation-in-ukraine>

Update 24 – IAEA Director General Statement on Situation in Ukraine

IAEA, March 17, 2022

Ukraine informed the International Atomic Energy Agency (IAEA) today that all safety systems at the country's largest nuclear power plant remained fully functional a day after the site lost connection to a third external power line linking it to the national electricity grid, Director General Rafael Mariano Grossi said. Two off-site power lines, including one on standby, are still available to the Zaporizhzhya Nuclear Power Plant (NPP) and there are no safety concerns, Ukraine's regulatory authority added.

<https://www.iaea.org/newscenter/pressreleases/update-24-iaea-director-general-statement-on-situation-in-ukraine>

US-run Ukraine project eyed causing harm via unchecked bird flu, food risks, says Russia

TASS, March 17, 2022

An unearthed US project at a veterinary medicine institute in Kharkov assessed conditions under which the transmission of highly pathogenic avian influenza might become unmanageable and create risks to food security, Russian Defense Ministry Spokesman Major General Igor Konashenkov said on Thursday. "The US

project at the Kharkov Veterinary Medicine Institute studied wild birds as vectors for transmitting highly pathogenic avian influenza. Simultaneously, conditions were assessed under which the transmission processes could get out of control, cause economic damage, and create risks to food security," Konashenkov said. According to him, the Russian Defense Ministry continues to study documents concerning military biological programs that the US and its NATO allies implemented in Ukraine, which were provided by Ukrainian lab personnel.

<https://tass.com/science/1423539>

Ukrainian bio laboratories received \$32 mln of funding from US – Russian Defense Ministry

TASS, March 17, 2022

Ukrainian Defense Ministry laboratories in Kiev, Odessa, Lvov and Kharkov received \$32 million funding from the US, says Russian Nuclear, Chemical and Biological Protection Troops commander Igor Kirillov. "I draw your attention to the fact that the agreement on joint biological activity was signed between the US military ministry and the Health Ministry of Ukraine. However, the true recipients of the funds were laboratories of Ukrainian Ministry of Defense located in Kiev, Odessa, Lvov and Kharkov. The total funding amount was \$32 million," he said.

<https://tass.com/politics/1423717>

Update 26 – IAEA Director General Statement on Situation in Ukraine

IAEA, March 19, 2022

Ukraine informed the International Atomic Energy Agency (IAEA) today that Ukrainian engineers had repaired and reconnected one of three previously disconnected power lines linking the Zaporizhzhya Nuclear Power Plant (NPP) to the electricity grid, Director General Rafael Mariano Grossi said. The repair of the power line means that the country's

largest nuclear power plant now has three off-site lines available, Ukraine's regulatory authority added. NPPs use such lines to send the electricity they generate to the grid and, if required, to obtain power themselves.

<https://www.iaea.org/newscenter/pressreleases/update-26-iaea-director-general-statement-on-situation-in-ukraine>

G. Germany

Germany to buy US-made F-35s capable of carrying nuclear weapons

Aljazeera, March 15, 2022

Germany will replace some of its ageing Tornado bomber jets with United States-made F-35A Lightning II aircraft capable of carrying nuclear weapons, according to the country's defence minister. Germany's air force (Luftwaffe) commander, Ingo Gerhartz, said the Russian war in Ukraine made it necessary to choose Lockheed Martin's F-35s. "There can be only one answer to [Russian President Vladimir] Putin's aggression," said Gerhartz. "Unity in NATO and a credible deterrent. This in particular means there is no alternative but to choose the F-35." The German military does not have nuclear weapons of its own, but as part of the system of nuclear deterrence developed during the Cold War, it maintained bombers capable of carrying US atomic bombs, some of which are stationed in Germany. US ambassador to Germany Amy Gutmann welcomed the announcement, however, saying that by acquiring new nuclear-capable aircraft Germany was "cementing its continued participation in NATO's nuclear-sharing mission". "Such a strong sign of Germany's commitment to NATO's deterrence could not come at a better time," she said.

<https://www.aljazeera.com/news/2022/3/15/germany-to-buy-us-made-f-35s-capable-of-carrying-nuclear-weapons#:~:text=German%20defence%20minister%20says%20the,F%2D35A%20Lightning%20II%20aircraft.&text=Germany%20will%20replace%20some%20of,to%20the%20country's%20defence%20minister.>

H. United Kingdom

Nuclear convoy 'carrying several warheads' travels 400 miles to UK arms depot

Daily Mirror, March 20, 2022

A nuclear convoy 'carrying several warheads' travelled 400 miles to an arms depot. The procession of olive trucks travelled along the M6 near Kendal and was later seen on the M74 at Lesmahagow 25 miles south of Glasgow. The transport is considered routine but comes amid heightened tensions worldwide owing to the Russian invasion of Ukraine on February 24. The convoy of weapons was tracked by Nukewatch UK which monitors movements of military weapons from Atomic Weapons Establishment Burghfield near Reading to Coulport in Argyll and Bute.

<https://www.mirror.co.uk/news/uk-news/nuclear-convoy-carrying-several-warheads-26512658>

I. United States of America

Hypersonic missile failures cast doubt on US bid to catch up with China and Russia

South China Morning Post, March 8, 2022

US efforts to catch up with China and Russia in developing hypersonic weapons may be set back after Lockheed Martin Corp.'s air-launched missile suffered three consecutive test failures that left it on a tight schedule. That has put in doubt the Pentagon's goal to declare it America's first combat-ready hypersonic weapon and approve initial production by September 30. China and Russia have conducted test launches and fielded their versions of the new weapons, which can travel five times the speed of sound and manoeuvre in flight like a cruise missile, making them harder to detect and shoot down.

<https://www.scmp.com/news/world/united-states-canada/article/3169619/hypersonic-missilefailures-cast-doubt-us-bid-catch>

U.S. Blasts Russia Claims of Bioweapons Labs in Ukraine: 'Absurd,' 'Laughable'

US News, March 9, 2022

The Defense Department on Wednesday shot down new accusations from Russia that the U.S. maintains nefarious biological weapons labs in Ukraine, blasting a "false narrative" that Moscow has employed as one of its pretexts for its full-scale invasion there. "This is a piece of the Russian playbook here," a senior defense official told reporters on the condition of anonymity on Wednesday morning. "Claim they're the victims, create a false narrative to try to justify their own aggressive actions. "It's absurd, it's laughable, it is untrue," the official said.

<https://www.usnews.com/news/world-report/articles/2022-03-09/u-s-blasts-russia-claims-of-bioweapons-labs-in-ukraine-absurd-laughable>

US nuclear forces chief 'very concerned' by Russia-China cooperation

Defence News, March 9, 2022

In the wake of Russia and China's strengthened ties, the U.S. admiral who oversees America's nuclear forces said Tuesday he is "very concerned" about potential "cooperative aggression" from the two nations. As China refuses to condemn Russia's invasion of Ukraine, and a day after China's foreign minister called Russia his country's "most important strategic partner," U.S. Strategic Command's chief, Adm. Chas Richard, said his organization must have plans ready for scenarios in which the two collaborate. "I'm very concerned about what opportunistic aggression looks like. I'm worried about what cooperative aggression looks like," Richard told the Senate Armed Services Committee, adding that his command's job includes deterring them both.

<https://www.defensenews.com/pentagon/2022/03/08/us-nuclear-forces-chief-very-concerned-by-russia-china-cooperation/>

U.S. Fights Bioweapons Disinformation Pushed by Russia and China

The New York Times, March 10, 2022

The Biden White House has taken the extraordinary step of calling out Russia and China on their coordinated propaganda campaign and saying they might be providing cover for a potential biological or chemical weapons attack on Ukrainians by the Russian military. "Now that Russia has made these false claims, and China has seemingly endorsed this propaganda, we should all be on the lookout for Russia to possibly use chemical or biological weapons in Ukraine, or to create a false flag operation using them," Jen Psaki, the White House press secretary, wrote on Twitter on Wednesday evening. "It's a clear pattern." She called the accusations "preposterous," and said the United States "does not develop or possess such weapons anywhere." The State Department labeled the assertions "total nonsense" and said Ukraine has no biological weapons labs. Top American intelligence officials reiterated those points in a Senate hearing on Thursday.

<https://www.nytimes.com/2022/03/10/us/politics/russia-ukraine-china-bioweapons.html>

U.S. accuses Russia of violating nuclear safety principles in Ukraine

Reuters, March 12, 2022

The United States on Friday accused Russia of violating nuclear safety principles in Ukraine and demanded its invading forces stop firing on nuclear power plants, but added that there were no signs detected yet of any radiological release. U.S. Energy Secretary Jennifer Granholm said in a Twitter post that radiation monitors in much of Ukraine were still functioning although the United States was concerned by lack of data from safeguards monitors at Chernobyl or Zaporizhzhia, which is Europe's largest nuclear power plant. "We remain concerned about Russia's reckless actions

and violations of nuclear safety principles," Granholm said. "We are monitoring reports of damage to a research facility in Kharkiv. Near-term safety risk is low, but the continued Russian firing on nuclear facilities must cease," she said.

<https://www.reuters.com/world/us-accuses-russia-violating-nuclear-safety-principles-ukraine-2022-03-12/>

US Department of Energy detects no signs of radiation release in Ukraine - head

TASS, March 12, 2022

The US Department of Energy has not detected any signs of radiological release in Ukraine, department's Secretary Jennifer Granholm stated on her Twitter page. As she noted, the US Department of Energy "continues to monitor the situation" regarding nuclear facilities in Ukraine. "Thankfully, radiation monitors in much of Ukraine still function, and we have not detected any signs of radiological release," Granholm noted. "We cannot confirm claims that power has been restored to Chernobyl. Ukrainian partners report delivery of some diesel fuel to power backup generators. Restoring outside electrical power at Chernobyl is an important safety step and Russia must act quickly to allow restoration of power," the Department of Energy's head pointed out.

<https://tass.com/world/1421017>

US doesn't see any specific signs Russia could use chemical weapons in Ukraine - Pentagon

TASS, March 12, 2022

The US sees no specific signs that Russia could use chemical weapons in Ukraine, Pentagon Press Secretary John Kirby said at a regular news conference on Friday. "I don't have any specific indication now to talk about, but it is something we're concerned about," he said in comments on Western reports that Russia could be planning to use chemical weapons during its special operation in Ukraine. "I don't have anything to report with respect to specific Russian chem-bio capabilities inside

Ukraine." Speaking about nuclear weapons, Kirby said Russia didn't create any new threats to the US. "I would just tell you that we've seen nothing that gives us a cause or reason to change our deterrent posture at this time," he said.

<https://tass.com/world/1421033>

After four decades and \$200 billion, the US missile defense system is no match for a Russian nuclear attack

Boston Globe, March 12, 2022

The US military has spent more than \$200 billion in the nearly four decades since working to make that science fiction a reality. Now, after Russian President Vladimir Putin placed his vast nuclear arsenal on high alert following his invasion of Ukraine, Americans might be wondering what kind of missile defense shield all that money and effort has produced. The US only has a limited ability to destroy an incoming nuclear intercontinental ballistic missile, a study released last month by the American Physical Society concluded. It said that "the current capabilities are low and will likely continue to be low for the next 15 years" to protect the US against a strike from North Korea, which has an estimated 20 nuclear warheads and relatively unsophisticated missiles. The Pentagon disputes the findings and says the most recent tests show the system can handle a North Korean attack. But the ability to defend against an attack by Russia, which is estimated to have nearly 6,000 nuclear warheads and highly sophisticated missile technology, is practically nonexistent. "This idea of an impenetrable shield against an enormous arsenal of Russian missiles is just a fantasy," said Laura Grego, a fellow at MIT's Laboratory for Nuclear Security and Policy who co-chaired the American Physical Society team that wrote the report. "It's too hard to do."

<https://www.bostonglobe.com/2022/03/12/nation/after-four-decades-200-billion-us-missile-defense-system-is-no-match-russian-nuclear-attack/>

What are Switchblade drones, the kamikaze 'killer' drones Biden is sending to Ukraine?

Washington Post, March 17, 2022

President Biden is ramping up efforts to help Ukraine fight back amid Russia's invasion, announcing an extensive new package Wednesday that he said would "provide unprecedented assistance" to the country. The increase in military aid includes a delivery of 100 Switchblade drones, small and precise weapons packed with explosives that are able to strike targets in "kamikaze" fashion, according to a U.S. official. They are single-use weapons – small, unmanned aircraft that are launched from a tube, and that experts say are capable of inflicting significant damage. The drones have blade-like wings that emerge when the device is launched.

<https://www.washingtonpost.com/world/2022/03/17/switchblade-drones-ukraine-russia-biden-war/>

Putin Likely to Make Nuclear Threats If War Drags, U.S. Says

Bloomberg, March 18, 2022

President Vladimir Putin can be expected to brandish threats to use nuclear weapons against the West if stiff Ukrainian resistance to Russia's invasion continues, draining conventional manpower and equipment, according to a new assessment by the Pentagon's Defense Intelligence Agency. "Protracted occupation of parts of Ukrainian territory threatens to sap Russian military manpower and reduce their modernized weapons arsenal, while consequent economic sanctions will probably throw Russia into prolonged economic depression and diplomatic isolation," Lieutenant General Scott Berrier, director of the Defense Intelligence Agency, said in its new 67-page summary of worldwide threats.

<https://www.bloomberg.com/news/articles/2022-03-17/putin-is-likely-to-make-nuclear-threats-if-war-drags-u-s-says>

US Says Iran Nuclear Deal Is Neither Imminent Nor Certain

Iran International, March 22, 2022

US State Department said Monday that a nuclear deal with Iran "is neither imminent nor is it certain", as talks in Vienna have paused for more than ten days. The department's spokesman Ned Price in his daily briefing said, "there has been significant progress in recent weeks, but I want to be clear that an agreement is neither imminent nor is it certain." The statement came as National Security Advisor Jake Sullivan slammed Iran's support for Yemen's Houthis as the rebel force launched multiple attacks against Saudi Arabia over the weekend. Sullivan repeated US accusations that Tehran is supplying missiles and drones to the Houthis, violating a United Nations arms embargo.

<https://www.iranintl.com/en/202203225350>

West Asia

J. Iran

Iran launches second military satellite into space

Tehran Times, March 8, 2022

The Islamic Revolution Guard Corps (IRGC) has successfully put a second military satellite, called Noor 2, into orbit, Tasnim said on Tuesday. Noor 2 is orbiting at an altitude of 500 kilometers (311 miles). The first military satellite, launched by the Islamic Republic in April 2020, placed the Noor, or "light" in Persian, at an orbit of 425km (265 miles) above the earth's surface. Putting the second satellite in space would be a major advance for Iran's military. The satellite was launched into space upon the three-stage Qased carrier from the Shahroud space port, Tasnim said.

The same type of rockets, which use a combination of liquid and solid fuels, carried the first military satellite. The U.S. military says the same long-range ballistic technology used to put satellites into orbit

could also allow Tehran to launch longer-range weapons, according to Reuters.

<https://www.tehrantimes.com/news/470854/Iran-launches-second-military-satellite-into-space>

Raisi admin. determined to develop aerospace industry

Islamic Republic News Agency, March 10, 2022

The pace of development in the aerospace industry has ratcheted up in Iran as the administration of President Ebrahim Raisi has started removing obstacles and paved the ground for multiplying number of space launches in the next Iranian calendar year (March 21, 2022 to March 20, 2023). Iran Space Council (ISC), also known as the Supreme Space Council, was shut down during two terms of previous administrations, which led to halting the aerospace industry in the country, while it experienced a fast growth during the decade before the recent 10 years. Of course, it should be mentioned that some players in aerospace industry of the country, including the Islamic Revolution Guards Corps (IRGC) succeeded in achieving breakthroughs in planning, manufacturing, and testing space engines as well as launching Nour-1 satellite, which was launched into orbit on 22 April 2020. This satellite reached an orbit of 425 kilometers above the surface of the Earth.

<https://en.irna.ir/news/84678388/Raisi-admin-determined-to-develop-aerospace-industry>

Tehran agrees to hiatus in Iran Nuclear Deal talks in Vienna – Foreign Ministry

TASS, March 11, 2022

The Iranian side agrees that it is necessary to take a hiatus in the Iran Nuclear Deal restoration talks in Vienna, Iranian Foreign Ministry spokesman Saeed Khatibzadeh tweeted Friday. "Pause in #ViennaTalks could be a momentum for resolving any remaining issue and a final return," he said, adding that "successful conclusion of talks will be the main focus of all." "No external factor will affect our joint will to go forward for a collective agreement," the spokesman

said. Earlier on Friday, EU High Representative Josep Borrell tweeted that a hiatus is needed in the Nuclear Deal talks in Vienna due to external factors.

<https://tass.com/world/1420629>

Israeli center hit with Iranian ballistic missiles

Tehran Times, March 13, 2022

At least a dozen ballistic missiles landed inside a vast compound that Iran says is used by the Mossad, Israel's external intelligence agency. The missiles hit the compound early Sunday morning, wrecking damage to a set of buildings under construction and reportedly killing a number of agents. The Beirut-based news television Al-Mayadeen said some agents were killed and injured in the attack. Citing sources familiar with the matter, the news channel said the attack was carried out with more than 10 precision-guided ballistic missiles that succeeded in targeting an Israeli intelligence and security headquarters in the vicinity of Erbil. The sources confirmed that the attack led to the destruction of the Mossad headquarters on the Masif road on the outskirts of Erbil.

<https://www.tehrantimes.com/news/471010/Israeli-center-hit-with-Iranian-ballistic-missiles>

IRGC Forces Capture Members of Sabotage Group at Fordow

Fars News Agency, March 15, 2022

The Islamic Revolution Guards Corps (IRGC) Intelligence and Security Organization forces arrested members of a sabotage team which plotted acts against Fordow nuclear facility in Central Iran. The IRGC security forces managed to prevent a major act of sabotage at the Iranian nuclear facility in the Northeastern part of Qom province, as the network was attempting to carry out its act before the Persian New Year holiday that starts on March 20. Officers of the Israeli spy agency, Mossad, attempted to get close to one of staff members of the IR6 unit of the Fordow facility. To that aim,

the officers first attracted the trust of one of the neighbors of that person by providing the neighbor with money and devices like a laptop and a cell phone.

<https://www.farsnews.ir/en/news/14001224000588/IRGC-Frces-Capre-Members-f-Sabage-Grp-a-Frdw>

IRGC Sets Up Nuclear-Security And Protection Command Center

Fars News Agency, March 15, 2022

Iran's Islamic Revolution Guards Corps (IRGC) set up a command center tasked with protecting security of the country's nuclear facilities. The existence of the newly-formed center was officially confirmed for the first time in a report that announced the arrest of a team planning sabotage acts at the Fordow Nuclear Facility. The team, appointed by the Israeli spy agency Mossad, was arrested by the IRGC's Intelligence Organization and Nuclear Command Center. Earlier this year following several acts of sabotage at Iran's nuclear facilities, Head of the Passive Defense Organization Brigadier General Gholamreza Jalali announced that a command center for nuclear defense and security would be formed.

<https://www.farsnews.ir/en/news/14001224001077/IRGC-Ses-Up-Nclear-Secriy-And-Precin-Cmmand-Cener>

Iran's IRGC launches smart submarines

Islamic Republic News Agency, March 15, 2022

The ceremony of joining smart submarines to the IRGC was attended by Commander-in-Chief of the Islamic Revolution Guards Corps (IRGC) Major General Hossein Salami, Commander of the IRGC's Navy Rear Admiral Alireza Tangsiri, and a group of high-ranking commanders and officials of the Armed Forces. In this ceremony, a lot of equipment and missile systems with new capabilities and operational features joined the IRGC Navy. Accordingly, durability and resilience, increasing the speed to 95 knots, as well as the ability to carry and fire missiles are the unique features of the new missile

launchers, and reconnaissance of the IRGC submarine missile.

<https://en.irna.ir/news/84685199/Iran-s-IRGC-launches-smart-submarines>

Lavrov says Russia has received U.S. guarantees over JCPOA

Tehran Times, March 15, 2022

Russian Foreign Minister Sergey Lavrov said on Tuesday that Moscow has received written guarantees from Washington that Western sanctions on Russia over Ukraine will not affect cooperation with Iran within the framework of the 2015 nuclear deal, officially known as the Joint Comprehensive Plan of Action (JCPOA). Lavrov made the announcement as he hosted his Iranian counterpart, Hossein Amir Abdollahian, for talks in Moscow. According to Al Jazeera, the remarks by Lavrov could potentially signal that Russia's demand that the sanctions would not impede its future dealings with Iran has been fulfilled. Moscow made the demand last week amid reports of an imminent agreement after more than 11 months of negotiations aimed at reviving the JCPOA

<https://www.tehrantimes.com/news/471092/Lavrov-says-Russia-has-received-U-S-guarantees-over-JCPOA>

Iran among world leaders in nanotechnology

Al-Monitor, March 17, 2022

Iran gained more than \$2.7 million from nanotechnology sales in 2021, the official Islamic Republic News Agency reported Wednesday. Nanotechnology refers to industrial production from atomic and molecule-sized matter. The field has several industrial and environmental benefits, but also has downsides, such as the possibility of creating toxic waste. Among Iran's nanotechnology products, 42% are related to construction, 17% are related to petroleum and 13% are related to automobile manufacturing, according to the agency.

<https://www.al-monitor.com/originals/2022/03/iran-among-world-leaders-nanotechnology>

K. Saudi Arabia

Saudi Arabia, UAE leaders not returning Biden's calls, disappointed with US - report

The Jerusalem Post, March 9, 2022

The leaders of Saudi Arabia and the United Arab Emirates have been declining calls from US President Joe Biden for several weeks, *The Wall Street Journal* reported on Wednesday, citing officials in the Middle East and the United States. The messages of dissatisfaction sent by Saudi crown prince Mohammed bin Salman (MBS) and Emirati Shiekh Mohammed bin Zayed al Nahyan come as the two leaders share concerns over the American response to recent missile and drone strikes from Yemen, claimed by the Iranian-backed Houthi rebels. The two nations are also reportedly disappointed with the state of negotiations in the ever-nearing Iran nuclear deal, according to the WSJ.

<https://www.jpost.com/middle-east/article-700734>

Arab States Strengthen Cooperation in Nuclear Medicine and Science

IAEA, March 10, 2022

The timely and accurate diagnosis and treatment of non-communicable diseases, including cancer, is a global issue, but among some Arab States in Asia, a significant shortage of cancer care infrastructure and capacities has stifled access to potentially life-saving nuclear medicine and radiotherapy. In the past 20 years, however, access to cancer care has improved significantly, as the IAEA, in close collaboration with partner institutions, has implemented a continuous series of projects to close cancer care inequity gaps in the region. Arabic speaking countries, under the Co-operative Agreement for Arab States in Asia for Research, Development and Training Related to Nuclear Science and Technology, known as ARASIA – an agreement between the ten Arab states, facilitated by the IAEA, are going to increase their cooperation in this area under five Memoranda of Understanding (MoU) signed last month. The concurrent MoU

signings are a first of their kind for ARASIA and enable the most technically-advanced Arab countries to support their neighbours in nuclear medicine, calibration of instrumentation, and in dosimetry and ensuring safety from ionising radiation.

<https://www.iaea.org/newscenter/news/arab-states-strengthen-cooperation-in-nuclear-medicine-and-science>

Saudi announces establishing Saudi Nuclear Energy Holding Company

Middle East Monitor, March 12, 2022

Saudi Arabia has announced its plan to establish a holding company for nuclear energy to participate in local and international commercial nuclear programmes, Saudi media revealed on Friday. According to *Okaz* newspaper, Saudi Prince Abdullah Bin Khalid Bin Sultan confirmed that the Saudi Nuclear Energy Holding Company (SNEHC) would participate in nuclear economic projects locally and internationally. Prince Abdullah, Saudi ambassador to the International Atomic Energy Agency (IAEA), said that the new company would operate and develop nuclear facilities to produce energy and desalinated water. Meanwhile, he called on Tehran to fully cooperate with the United Nations nuclear watchdog and avoid the policy of delay and procrastination in answering ongoing inquiries.

<https://www.middleeastmonitor.com/20220312-saudi-announces-establishing-saudi-nuclear-energy-holding-company/>

L. Israel

UAE, Israel press US for security guarantees if new Iran deal is signed, report says

Middle East Eye, March 14, 2022

The United Arab Emirates and Israel have asked the United States to provide them with security guarantees and to “formulate

a security strategy for the Middle East" should the Iran nuclear deal be revived, Bloomberg News reported on Monday. Five people familiar with the matter told Bloomberg that Israel and the UAE have separately approached the Biden administration and are demanding a security strategy that includes boosting defence and intelligence sharing. Israel and Abu Dhabi are coordinating their efforts despite reaching out separately, according to three of the people, amid concerns that the nuclear deal would provide Iran with increased funds through the sale of oil. The suspension of the nuclear talks last week, coupled with Washington's desire to ease the volatility in the current oil market as it continues sanctions against Russia, has given Saudi Arabia and the UAE more leverage as leaders in Opec.

<https://www.middleeasteye.net/news/iran-nuclear-deal-uae-israel-lobbying-us-security-guarantees>

Iran could use nuclear deal to fund terrorist militias, Israeli diplomat warns

Arab News, March 21, 2022

A renewed nuclear deal with Iran will channel billions of dollars into funding the regime's militias, spreading terror across the region and beyond, an Israeli diplomat has warned. In an interview with the Sunday Telegraph, Joshua Zarka, deputy director general of the Foreign Ministry, said the Israeli government was "extremely troubled" by the possibility of Iran using funds from the deal to arm proxy militias to carry out attacks. He added that sanctions being lifted from Tehran would lead to tensions rising between Iran and Israel, with Israeli Defense Minister Benny Gantz saying the country could strike Iran militarily if it was left with "no choice but to act."

<https://www.arabnews.com/node/2047181/middle-east>

M. Turkey

Turkey no longer considering purchase of Patriot missile systems from US

TASS, March 14, 2022

Ankara is no longer considering the possibility of purchasing the Patriot missile systems from the United States, Head of Turkey's Presidency of Defense Industries Ismail Demir said on Monday. "There is currently no demand for the Patriot missile systems. As far as our defense industry is concerned, we have closed this page," the Sabah newspaper quoted him as saying. Meanwhile, in Demir's words, the implementation of Ankara's contract to purchase the S-400 air defense systems from Russia "continues without any issues."

<https://tass.com/defense/1421671>

N. East Asia

Duterte's push for nuclear energy leads to PH-US tie-up

Philippine Daily Inquirer, March 13, 2022

The Philippines and the United States have agreed to strengthen their "strategic civil nuclear cooperation" to improve the country's energy security and other nonmilitary uses of nuclear power under a memorandum of understanding (MOU), the Department of Energy (DOE) said on Saturday. The MOU follows President Rodrigo Duterte's Executive Order No. 164 issued in February, which now makes it a national policy to include nuclear power generation into the country's current energy mix – fossil fuel, hydro, wind, solar, and geothermal. The MOU was signed last week by Energy Undersecretary Gerardo Erguiza and Undersecretary of State for Arms Control and International Security Bonnie Jenkins at the Department of State in Washington and witnessed by Jose Manuel Romualdez, the Philippine ambassador to the United States.

<https://globalnation.inquirer.net/202945/dutertes-push-for-nuclear-energy-gets-us-assist#ixzz7P8x8tvGw>

Singapore explores tapping nuclear energy by 2050

The Straits Times, March 22, 2022

Nuclear energy, once deemed unsuitable for Singapore, has been identified as a potential power source for the country by 2050 in a new report published on Tuesday (March 22). The report, commissioned by the Energy Market Authority (EMA), concluded that nuclear energy could by 2050 supply about 10 per cent of the country's needs, with advancements in nuclear technology making it safer and more reliable.

<https://www.straitstimes.com/singapore/environment/singapore-exploring-tapping-nuclear-energy-by-2050>

O. Japan

Ukraine envoy to Japan says Putin may be willing to use nuclear weapons

Reuters, March 11, 2022

The Ukrainian ambassador to Japan, Sergiy Korsunsky, said on Friday it was possible Russian President Vladimir Putin would be willing to use nuclear weapons against Ukraine in the face of its determined resistance against the Russian invasion. "We will fight until the end, we are not going to live in a Russia-managed state," Korsunsky told Reuters in an interview. "There is no reason to believe that he (Putin) can threaten us, as he thinks, to the state that we will overthrow our government and we will embrace Russia after what they have done to us. No way. Therefore he may use nuclear weapons."

<https://www.reuters.com/world/europe/ukraine-envoy-japan-says-putin-may-be-willing-use-nuclear-weapons-2022-03-11/>

As Fukushima memory fades, Japan's nuclear power proponents hope for reset

Reuters, March 11, 2022

On the eve of the 11th anniversary of the worst nuclear disaster since Chernobyl, some

ruling party lawmakers urged the government to hasten the restart of nuclear power plants, most of them idled since 2011 because of safety concerns. The growing calls from Japan's business leaders, lawmakers, and even the main opposition party come amid persistent public opposition to nuclear power, muddying the outlook for energy policy. "The government must restart nuclear power plants swiftly to overcome this current crisis," a parliamentary group of the ruling Liberal Democratic Party (LDP) said on Thursday, calling the situation in Ukraine "dangerous" for Japan's energy supply. Mindful of a looming upper house election in July, Prime Minister Fumio Kishida and members of his cabinet have moved cautiously, repeating the government's position that safety considerations were key to any decisions on nuclear restarts.

<https://www.reuters.com/world/asia-pacific/fukushima-memory-fades-japans-nuclear-power-proponents-hope-reset-2022-03-11/>

No Safety Concern at Nuclear Power Plants After Powerful Earthquake, Japan Informs IAEA

IAEA, March 17, 2022

A powerful earthquake off the eastern coast of Japan did not cause any issues of safety concern at the three nuclear power plants in the area, including the Fukushima Daiichi Nuclear Power Station, the country's Nuclear Regulation Authority (NRA) told the International Atomic Energy Agency (IAEA) today. The NRA said "deficiencies" were found at some of the nuclear facilities after the 7.3 magnitude quake and the operators were dealing with them. As of 04:30 UTC today, 17 March, it added, there were no reports of issues giving rise to safety concerns at the nuclear sites located in the region. The NRA earlier informed the IAEA that the tremor had not caused elevated radiation levels at the plants.

<https://www.iaea.org/newscenter/pressreleases/no-safety-concern-at-nuclear-power-plants-after-powerful-earthquake-japan-informs-iaea>

Japan no to withdraw from nuclear cooperation agreement with Russia – PM

TASS, March 17, 2022

Japan doesn't plan to unilaterally withdraw from the bilateral agreement on cooperation with Russia in the peaceful use of nuclear energy, Japanese Prime Minister Fumio Kishida said on Thursday. "We should bear in mind that our refusal to implement the agreement may send a wrong signal to the international community and Russia," he told lawmakers when asked whether Japan should terminate the corresponding agreement with Russia amid the developments in Ukraine. However, he noted that he doesn't know whether Russia would stay committed to this agreement. He recalled that the guarantor of such agreements is the International Atomic Energy Agency (IAEA). The Russian-Japanese framework agreement on cooperation in the sphere of the peaceful use of nuclear energy was signed on May 12, 2009 during Vladimir Putin's, Russia's Prime Minister at that time, visit to Japan.

<https://tass.com/world/1423379>

P. North Korea

North Korea could return to ICBM, nuclear tests this year, U.S. intelligence report

Reuters, March 8, 2022

North Korea's missile launches could be groundwork for a return to intercontinental ballistic missile and nuclear bomb tests this year for the first time since 2017, the U.S. Directorate of National Intelligence (DNI) said in its annual Worldwide Threat Assessment released on Monday. On Tuesday, U.S.-based analysts said commercial satellite imagery shows construction at North Korea's nuclear testing site for the first time since it was closed in 2018. The DNI report, dated Feb. 7, and released ahead of a congressional hearing on Tuesday, said North Korean leader Kim Jong Un remained strongly committed to expanding his nuclear weapons arsenal and ballistic missile

research and development. "In January, North Korea began laying the groundwork for an increase in tensions that could include ICBM or possibly a nuclear test this year - actions that Pyongyang has not taken since 2017," the report said.

<https://www.reuters.com/world/asia-pacific/nkorea-could-return-icbm-nuclear-tests-this-year-us-intelligence-report-2022-03-08/>

North Korea reactivating closed nuclear test site, satellite images suggest

South China Morning Post, March 8, 2022

Commercial satellite imagery shows construction at North Korea's nuclear testing site for the first time since it was closed in 2018, US-based analysts said on Tuesday, amid fears the country could resume testing major weapons. Images captured by satellite on Friday showed very early signs of activity at the new site, including construction of a new building, repair of another building, and what is possibly some timber and sawdust, specialists at the California-based James Martin Centre for Nonproliferation Studies (CNS) said in a report. "The construction and repair work indicate that North Korea has made some decision about the status of the test site," the report said. Punggyeri has been closed since North Korea declared a self-imposed moratorium on nuclear weapons tests in 2018. Leader Kim Jong-un, however, has said he no longer feels bound by that moratorium as denuclearisation talks are stalled.

<https://www.scmp.com/news/asia/east-asia/article/3169634/north-korea-reactivating-closed-nuclear-test-site-satellite>

North Korea fires missile but launch fails, says South

BBC, March 16, 2022

North Korea has fired an "unknown projectile" which appeared to fail immediately after launch, South Korea's military said. The suspected missile was fired from an airfield outside the capital

Pyongyang. The airfield has been the site of several launches, including previous tests of what were the US alleges were intercontinental ballistic missiles (ICBMs). It comes as North Korea has in recent weeks stepped up its weapons testing. "North Korea fired an unknown projectile from the Sunan area around 09:30 today, but it is presumed that it failed immediately after launch," Seoul's Joint Chiefs of Staff said in a statement. North Korea has so far carried out nine weapons tests this year, including what the US claims were tests of parts of a new ICBM, saying they were likely to have been experimental launches before a probable full-range ICBM launch. With a minimum range of 5,500km (3,417 miles), ICBMs can reach the US. They are designed for nuclear arms delivery.

<https://www.bbc.com/news/world-asia-60760766>

Q. Africa

Nigeria moving ahead on nuclear power plant plan

World Nuclear News, March 18, 2022

The Director General of the Nigerian Nuclear Regulatory Authority (NNRA), Yau Idris, said that agreements had been signed with a number of other countries' regulators as plans proceed for a proposed four unit plant. Speaking at the Nigerian International Energy Summit in Abuja earlier this month, Idris said that Nigeria had had a small nuclear research reactor in operation for 18 years "so if anyone tells you Nigeria can't manage a nuclear power plant - they are just telling you a story". "There are mechanisms put in place worldwide whereby any country that has the capacity can build a nuclear power plant and Nigeria has gone far on this," he said. "Nigeria is trying to deliver 4000 MW of electricity through nuclear power. We are planning to construct four units and currently we are at the bidding phase of the nuclear power programme in Nigeria," he said.

<https://www.world-nuclear-news.org/Articles/Nigeria-moving-ahead-on%C2%A0nuclear-power-plant-plan>

R. Australia

Sydney ruled out as nuclear submarine base - despite topping list of sites in Defence study

The Guardian, March 8, 2022

Sydney Harbour has been ruled out as a site for the proposed new base for Australia's nuclear-powered submarines, with officials insisting it was not viable because of "limitations on berth space and shore facilities". Questions have been raised about how the Morrison government settled on the three potential sites it announced this week - Port Kembla in Wollongong, Newcastle and Brisbane - given that these were not among the top five options listed in a previous Defence review. A 2011 Defence report ranked potential options for a new east coast home port for submarines. The top three options were in Sydney Harbour, followed by two options in Jervis Bay, south of Sydney. The same study said it "would be impractical" to develop a future submarine basing capability at Port Kembla, noting it had previously been found to be "a small and congested harbour with little space for substantial expansion". When asked by Guardian Australia to explain what had changed since that review, a Defence spokesperson said changes in commercial activity at Port Kembla had released a large pocket of land which was "now potentially suitable for creation of a new naval base". Jervis Bay had been "discounted as it is a gazetted marine park", the spokesperson said.

<https://www.theguardian.com/australia-news/2022/mar/09/sydney-ruled-out-as-nuclear-submarine-base-despite-topping-list-of-sites-in-defence-study>

S. Opinions

The Final Push for U.S. Chemical Weapons Demilitarization

Leanne Quinn

Arms Control Association, March 14, 2022

Despite the delays in its campaign to eliminate chemical weapons, the United

States has achieved tremendous progress toward the destruction of its massive and highly toxic chemical weapons arsenal. According to the OPCW's annual report for 2022, the OPCW confirmed that the United States has verifiably destroyed a total of 26,606.252 metric tons of priority Category 1 chemical weapons, which is 95.81% of the total U.S. declared stockpile. The United States has destroyed all of its Category 2 chemical weapons, such as phosgene, and Category 3 weapons, including unfilled munitions, devices, and equipment designed specifically to employ chemical weapons. As of March 2022, 418.4 metric tons of mustard agent remain at the Pueblo Chemical Agent-Destruction Pilot Plant in Colorado and just under 300 metric tons of VX nerve agent are left to be destroyed at the Blue Grass Chemical Agent Destruction Pilot Plant in Kentucky. With only a year and a half left to finish its chemical weapons demilitarization mission - an effort started nearly 40 years ago - the United States government must commit the necessary resources and funding to ensure it meets its treaty-mandated deadline of Sept. 30, 2023.

<https://www.armscontrol.org/issue-briefs/2022-03/final-push-us-chemical-weapons-demilitarization>

Ukraine war: Could Russia use tactical nuclear weapons?

Gordon Corera

BBC, March 16, 2022

Soon after Russia invaded Ukraine, President Vladimir Putin said he was moving his "deterrent forces" - meaning nuclear weapons - to "combat ready" status. This has raised fears that Moscow could use "tactical" nuclear weapons - not an all-out nuclear war, but still a dramatic development. Russia is thought to have about 2,000 tactical nuclear weapons. These can be placed on various types of missiles which are normally used to deliver conventional explosives. They can even be fired as artillery shells on a battlefield. They have also been developed for aircraft and ships - for instance torpedoes and depth charges to target submarines. President Putin has made more than one reference to Russia's nuclear weapons - apparently to try

to create a sense of fear. US spies see this as a signal to the West to persuade it not to intervene more in Ukraine, not as a sign he is planning nuclear war.

<https://www.bbc.com/news/world-60664169>

How invasion of Ukraine could transform nuclear landscape of Asia

C. Raja Mohan

Indian Express, March 19, 2022

Russian President Vladimir Putin's nuclear sabre-rattling in Ukraine, which did create political ripples in Europe, has triggered a far more consequential debate on the importance of atomic weapons in deterring Chinese expansionism. For those facing Chinese wrath in Asia, it is not difficult to buy into the proposition that Russia would have thought twice before invading Ukraine if Kyiv had nuclear weapons.

<https://indianexpress.com/article/opinion/columns/invasion-ukraine-transform-nuclear-landscape-asia-7805611/>

Putin's War Is a Death Blow to Nuclear Nonproliferation

Andreas Umland and Hugo Von Essen

Foreign Policy, March 21, 2022

One of the most dangerous and far-reaching repercussions of Russia's invasion of Ukraine is the subversion of the Nuclear Non-Proliferation Treaty (NPT) - perhaps the most critical multilateral agreement for the survival of humanity. Since its first attack on Ukraine in 2014, Russia's actions have put the logic of the treaty to prevent the spread of atomic weapons on its head. Because Ukraine once possessed nuclear weapons but gave them up when it joined the NPT in 1994, Russia's renewed aggression makes it look as if the treaty's purpose is to keep weak countries defenseless and prey to the nuclear-weapon states. Russian President Vladimir Putin said as much at the start of the war, when he announced that he had put his country's nuclear forces on

alert and issued ominous threats to anyone daring to get in Russia's way.

<https://foreignpolicy.com/2022/03/21/nuclear-weapons-war-russia-ukraine-putin-nonproliferation-treaty-npt/>

The Smaller Bombs That Could Turn Ukraine Into a Nuclear War Zone

William Broad

The New York Times, March 21, 2022

In destructive power, the behemoths of the Cold War dwarfed the American atomic bomb that destroyed Hiroshima. Washington's biggest test blast was 1,000 times as large. Moscow's was 3,000 times. On both sides, the idea was to deter strikes with threats of vast retaliation — with mutual assured destruction, or MAD. The psychological bar was so high that nuclear strikes came to be seen as unthinkable. Today, both Russia and the United States have nuclear arms that are much less destructive — their power just fractions of the Hiroshima bomb's force, their use perhaps less frightening and more thinkable. Concern about these smaller arms has soared as Vladimir V. Putin, in the Ukraine war, has warned of his nuclear might, has put his atomic forces on alert and has had his military carry out risky attacks on nuclear power plants. The fear is that if Mr. Putin feels cornered in the conflict, he might choose to detonate one of his lesser nuclear arms — breaking the taboo set 76 years ago after Hiroshima and Nagasaki.

<https://www.nytimes.com/2022/03/21/science/russia-nuclear-ukraine.html>

Russia's Anti-Satellite Weapons: An Asymmetric Response to U.S. Aerospace Superiority

Jaganath Sankaran

Arms Control Association, March, 2022

Russia conducted a direct-ascent hit-to-kill anti-satellite (ASAT) test on November 15, 2021, striking a Russian satellite and rendering it into more than 1,500 pieces of orbital debris.¹ Reacting to the test, U.S.

Space Command commander Army Gen. James Dickinson claimed that Russia is "deploying capabilities to actively deny access to and use of space by the United States and its allies."² He further noted that Russia's counterspace weapons systems undermine strategic stability. Russian military leaders and analysts argue, however, that their counterspace weapons provide a means to restore strategic stability. Russian Defense Minister Sergei Shoigu characterized the test as a routine operation of a "cutting-edge future weapon system" to strengthen Russia's deterrent and defense against U.S. attempts to attain "comprehensive military advantage" in space. Russian leaders believe that a change in the character of warfare has been unfolding over the past three decades. They write that the next generation of warfare will be waged in the aerospace domain with weapons enabled by satellite targeting and navigation.

<https://www.armscontrol.org/act/2022-03/features/russias-anti-satellite-weapons-asymmetric-response-us-aerospace-superiority>

Putin's Assault on Ukraine and the Nonproliferation Regime

Daryl Kimball

Arms Control Association, March, 2022

Putin's indefensible, premeditated assault on Ukraine will heighten tensions between NATO and Russia, increase the risk of conflict elsewhere in Europe, and undermine prospects for nuclear nonproliferation and disarmament—for years to come. Putin's aggression against Ukraine violates the 1994 Budapest Memorandum in which Russia, the United Kingdom, and the United States extended security assurances against the threat or use of force against Ukraine's territory or political independence. In response, Ukraine acceded to the nuclear Nonproliferation Treaty (NPT) as a non-nuclear-weapon state and gave up the 1,900 nuclear warheads it inherited from the Soviet Union. Ukraine, Russia, and the world were safer as a result. But Putin's behavior undermines the NPT and reinforces the

impression that nuclear-armed states can bully non-nuclear states, thus reducing the incentives for disarmament and making it more difficult to prevent nuclear proliferation.

<https://www.armscontrol.org/act/2022-03/focus/putins-assault-ukraine-nonproliferation-regime>

Addressing the Iranian Missile Threat: A Regional Approach to Risk Reduction and Arms Control

IISS, March 22, 2022

A new report from the IISS Strategy, Technology and Arms Control Programme examines the opportunities and challenges in seeking a diplomatic pathway to constraining Iran's missile activities in the context of the potential revival of the 2015 nuclear agreement with Iran, the Joint Comprehensive Plan of Action (JCPOA). A major objection to the JCPOA was that it does nothing to address Iran's rapidly advancing missile programme. Indeed, there is no consensus at present on which aspects of Iran's missile programs present the most significant threat, who should be at the table, or what the desired outcome would be. This report, titled 'Addressing the Iranian missile threat: a regional approach to risk reduction and arms control', makes the case that a regional approach that addresses the underlying security dynamics in the region may be most likely to succeed, given the political will by interested countries.

<https://www.iiss.org/blogs/research-paper/2022/03/addressing-the-iranian-missile-threat>

The effect of AUKUS on India's foreign and defence policies

IISS, March, 2022

In September 2021, India greeted the news that Australia, the United Kingdom and the United States had formed 'AUKUS' - a security partnership focusing on the Indo-Pacific - coolly. This is despite it improving its diplomatic and security engagements with each of these countries since 2017, when Sino-India relations soured after an armed stand-off over a long-standing border dispute. New Delhi is particularly concerned

that AUKUS may cause an increase in the number of nuclear-powered attack submarines operating in the eastern Indian Ocean from the 2030s onwards, an issue aggravated by the fact that the Indian Navy would like to acquire these types of vessels but currently does not have a clear plan to do so.

<https://www.iiss.org/publications/strategic-comments/2022/the-effect-of-aukus-on-indias-foreign-and-defence-policies>

Contribute Articles

Indian Pugwash Society welcomes research articles from students, researchers and faculties on Space, Missile, nuclear technology, WMD proliferation, arms control, disarmament, export controls and other related issues. Articles should be crisply written and should address contemporary debates in the policy arena. Manuscripts submitted for the consideration of the Indian Pugwash Society should be original contributions and should not have been submitted for consideration anywhere else. For further assistance, please contact us at : indianpugwashsociety@gmail.com

The Indian Pugwash Society aims to promote the study, discussion, and knowledge of and to stimulate general interest in, and to diffuse knowledge in regards to problems relating on WMD proliferation, arms control, disarmament, space security, export controls, nuclear technology and other related issues. This newsletter is part of the project "Emerging Nuclear Order in Asia: Implications for India" sanctioned to us by Department of Atomic Energy-Board of Research in Nuclear Sciences (DAE-BRNS).

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