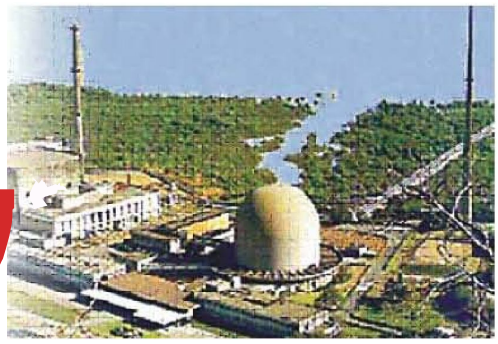
NUCLEAR SECURITY



A FORTNIGHTLY NEWSLETTER ON NUCLEAR ENERGY, NON-PROLIFERATION AND DEFENCE FROM CENTRE FOR AIR POWER STUDIES

Vol 17, No. 16, 15 JUNE 2023

CONTENTS

OPINION – John T Deacon, Etel Solingen

Japan's Nuclear Weapon Dilemma Growing More Acute

The contemporary security context has sharpened Japan's dilemma regarding nuclear weapons. ÿþJapan is surrounded by several nuclear-armed neighbors and depends on US extended deterrence rather than its own nuclear deterrent. An opportunity was embedded in Japan's role as G7 chair for the 2023 summit in Hiroshima, the site of the 1945 nuclear attack and Prime Minister Kishida's electoral constituency.

The dilemma is one Japan has faced for decades. In 1967, then-prime minister Eisaku Sato introduced the Three Non-Nuclear Principles, adopted by the Diet, declaring that Japan will not possess, manufacture or introduce nuclear weapons. In 1968, Sato reaffirmed this goal in his Four Pillars of Nuclear Policy, adding commitments to work toward global nuclear disarmament, nuclear energy's peaceful use and continued reliance on US extended deterrence.

The contemporary security context has sharpened Japan's dilemma regarding nuclear weapons. ÿþJapan is surrounded by several nuclear-armed neighbors and depends on US extended deterrence rather than its own nuclear deterrent. An opportunity was embedded in Japan's role as G7 chair for the 2023 summit in Hiroshima.

In 1976, Japan ratified the NPT and in 1997 the CTBT. Japan has consistently submitted draft resolutions supporting disarmament activities to the UNGA and participated in programs such as the Non-Proliferation and Disarmament Initiative. But internal debate has persisted. A series of senior politicians — including a former minister and vice minister of defense, and a prominent opposition leader — have expressed concern about Japan's lack of its own nuclear deterrent, especially against China.

Former chief cabinet secretary Yasuo Fukuda claimed amending the Three Non-Nuclear Principles was "likely" after his deputy declared possessing tactical nuclear weapons would be constitutional. A nuclear-armed North Korea sparked similar remarks. In 2006, after North Korea's first nuclear test, the Liberal Democratic Party's Policy Research Council Chairman Shoichi Nakagawa proposed a public

discussion of nuclear weapons acquisition.

In 2017, former defense minister Shigeru Ishiba proposed hosting US nuclear weapons on Japanese soil but was dismissed by the defense minister at the time. Despite its technical capabilities, Japan continued to eschew acquisition, relying instead on the United States' nuclear umbrella. Japan's security dilemmas intensified recently, as leaders and the public perceive heightened belligerence from its nuclear-armed neighbors.

North Korea's recurrent nuclear and missile tests of growing sophistication into Japan's vicinity, along with direct verbal threats, sometimes require evacuating Japanese civilians. In his aggressive nuclear rhetoric, President Putin's Russia resembles North Korea and has suspended peace treaty negotiations with Japan over Northern Territories. Japan also perceives China's "no limits" embrace of Putin and "wolf warrior" diplomacy to have replaced China's "peaceful rise."

North Korea's recurrent nuclear and missile tests of growing sophistication into Japan's vicinity, along with direct verbal threats, sometimes require evacuating Japanese civilians. In his aggressive nuclear rhetoric, President Putin's Russia resembles North Korea and has suspended peace treaty negotiations with Japan over Northern Territories.

China's East and South China Sea military activities and firing of ballistic missiles into Japan's exclusive economic zone have escalated tensions. Equally concerning is China's abandonment of its minimal nuclear deterrent capability of about 400 nuclear warheads, which is estimated to increase to 1,500 by 2035.

Putin's nuclear rhetoric led even President Xi to call on the international community to "jointly oppose the use of, or threats to use, nuclear weapons." Russia's invasion of Ukraine reignited Japan's concerns, with former prime minister Abe encouraging a national discussion on nuclear weapons-sharing arrangements with the United States. But Kishida, along with Defense Minister Nobuo Kishi, expressed that such an arrangement was "unacceptable given [Japan]'s stance of maintaining the Three Non-Nuclear Principles."

Russia's invasion of Ukraine reignited Japan's concerns, with former prime minister Abe encouraging a national discussion on nuclear weapons-sharing arrangements with the United States. But Kishida, along with Defense Minister Nobuo Kishi, expressed that such an arrangement was "unacceptable given [Japan]'s stance of maintaining the Three Non-Nuclear Principles.

The durability of Japan's commitment to abiding by the NPT raises an important consideration. Some security analysts have predicted Japan would seek its own nuclear deterrent in tandem with three of its neighbors' nuclearization. Yet Japan's decades-old nuclear abstention defies those predictions, which neglected other considerations.

Early in the Cold War, Japan's commitment to global economic interdependence prioritized stability and global market access. This shaped incentives to remain a non-nuclear weapons state and reduce risks to its economy. Japan also capped defense spending at 1% of GDP. While by 2020 China had surpassed the United States as Japan's top export market, Japan still relied on US extended deterrence despite its own technological capabilities.

Unlike in South Korea, Japanese public opinion remains opposed to nuclear weapons acquisition. A 2019 national survey found 75% of respondents supported ratifying the Treaty on the Prohibition of Nuclear Weapons. To reassure the public, Japan's leaders launched the largest military expansion since 1945. While Article 9 of the Constitution famously renounced the right to maintain military forces, in 2015 the Diet voted to allow Japanese forces to deploy overseas to defend allies.

In 2017, the 1% of GDP cap in defense

expenditures was superseded, and in 2022 Kishida raised it to 2% by 2027 — on track to become the third-largest defense budget globally. Joint military drills have increased, and Japan has signed new defense agreements with Australia and the United Kingdom.

Japan also planned its G7 chairmanship of the Hiroshima summit carefully. Just as it championed the Comprehensive and Progressive Trans-Pacific Partnership, Japan has sought leadership in other realms. In 2022 Kishida established the International Group of Eminent Persons for a World without Nuclear Weapons and became the first Japanese prime minister to attend the NPT review conference, where he presented the anti-nuclear "Hiroshima Action Plan."

Japan also planned its G7 chairmanship of the Hiroshima summit carefully. Just as it championed the Comprehensive and Progressive Trans-Pacific Partnership, Japan has sought leadership in other realms.

In early 2023, as Xi spent three days visiting Putin in Moscow, Kishida visited Kyiv. He invited President Zelensky to attend the G7 summit, concerned with troubling parallels between threats to Ukraine and threats in the Indo-Pacific. Kishida's article in *Foreign Affairs*, published on the eve of the summit, expressed his commitment to reinforcing "a free and open international order." Reaffirming the principles of an April 2023 G7 communique, Kishida envisioned "a world without nuclear weapons."

To set the stage, Kishida launched the G7 summit by greeting G7 leaders at the Hiroshima Peace Memorial Park. While the Hiroshima Vision on Nuclear Disarmament disappointed nuclear abolitionists, it also reaffirmed Japan's longstanding abstention from acquiring its own nuclear deterrent, even at this critical juncture. Japan has stayed its course.

Source: https://asiatimes.com/2023/06/japans-nuclear-weapon-dilemma-growing-more-acute/, 01 June 2023.

OPINION – Jennifer Ahn

Challenges Ahead for US Efforts to Quell South Korea's Nuclear Ambitions

South Korean President Yoon Suk-yeol's state visit to Washington to meet with President Biden in April 2023 marked the 70th anniversary of the US–South Korea alliance. The meeting provided an opportunity for the two leaders to highlight US–South Korean alignment and deepening cooperation on issues of peninsular, regional and global significance.

Of particular significance during the summit meeting was the unveiling of the Washington Declaration that established the US–South Korea Nuclear Consultative Group (NCG). The Declaration represents a response to several consequential domestic and regional developments.

Polls in South Korea show the percentage of domestic support for the acquisition of nuclear weapons ranging between the high 60s and mid-70s. The factors driving the South Korean public's sentiment include concerns over the US extended deterrence commitment and whether the United States would defend South Korea if North Korea were to simultaneously threaten the US mainland.

In South Korea, the public debate over developing nuclear weapons gained unprecedented attention after President Yoon's comment in January 2023 about the possibility of South Korea going nuclear. Polls in South Korea show the percentage of domestic support for the acquisition of nuclear weapons ranging between the high 60s and mid-70s. The factors driving the South Korean public's sentiment include concerns over the US extended deterrence commitment and whether the United States would defend South Korea if North Korea were to simultaneously threaten the US mainland.

Advocates of nuclearisation also call for nuclear balance with North Korea's nuclear arsenal and

greater autonomy and agency over South Korea's ability to defend itself in the face of growing regional and global security challenges. Regionally, North Korea has continued to advance its military capabilities. Within the first five months of 2023, the country has launched six short-range ballistic missile tests, three cruise missile tests and three intercontinental ballistic missile tests.

Current discussions for the United States, Japan and South Korea to share North Korean missile warning data in real-time further reinforce efforts by the three countries to strengthen deterrence in the region. The Washington Declaration does not represent a fundamental change in US nuclear policy towards South Korea, such as the redeployment of US nuclear weapons or sharing of US nuclear assets.

These tests — which have used a diverse set of launch sites and delivery systems — signify North Korea's desire for continued progress within its weapons program through the operationalisation of potential nuclear-use scenarios. These advancements also underscore North Korea's perception that it must continue strengthening its nuclear forces and maintain its readiness to counter what it views as long-term military threats to the survival of the regime.

In response to the growing threat posed by North Korea's weapons program, the United States, Japan and South Korea have strengthened trilateral security cooperation with the expansion of military exercises. In 2023, the three countries have conducted joint military drills for ballistic missile defence, anti-submarine warfare and search-and-rescue and maritime missile defence. These exercises aim to enhance force interoperability and showcase regional trilateral cooperation.

Still, the United States and South Korea will simultaneously need to explore alternative or additional measures for bringing North Korea back to the negotiating table. Extended deterrence and diplomacy should strengthen in conjunction with — rather than at the expense of — one another.

Current discussions for the United States, Japan and South Korea to share North Korean missile warning data in real-time further reinforce efforts by the three countries to strengthen deterrence in the region. The Washington Declaration does not represent a fundamental change in US nuclear policy towards South Korea, such as the redeployment of US nuclear weapons or sharing of US nuclear assets. Rather, the agreement assuages South Korean anxieties about North Korea and US defence commitments through joint planning, enhanced consultations and expanded training and tabletop exercises.

The NCG envisions an increased role for South Korea to consult and coordinate with the United States against a potential North Korean nuclear attack. This addresses the concerns of South Korean advocates who have argued since the early 2000s for strengthening extended deterrence efforts within the alliance and embedding US nuclear deterrence into a broader framework like the NATO Nuclear Planning Group.

In this sense, opponents of a nuclear South Korea and moderate nuclear proponents now have a concrete agreement to point to when debating against independent nuclear acquisition. But the agreement may not prove satisfactory for resolving the South Korean public's perceived vulnerability against North Korea's expanding nuclear arsenal. Nor does it assuage nuclear proponents who desire the return of US nuclear weapons or US support for a South Korean nuclear weapons program.

For some nuclear advocates, it is likely that only South Korean control over nuclear weapons — whether owned by the United States or South Korea — will resolve the current nuclear debate. The ability of the NCG to quell South Korean desires for nuclear weapons may depend on the

speed and robustness of its implementation. Still, the United States and South Korea will simultaneously need to explore alternative or additional measures for bringing North Korea back to the negotiating table. Extended deterrence and diplomacy should strengthen in conjunction with — rather than at the expense of — one another.

While the Washington Declaration may have moved forward the needle in addressing existing questions regarding US defence commitments to South Korea, South Koreans will continue assessing whether US extended deterrence could come under future threat and how South Korean defence capabilities should evolve alongside regional security threats. The upcoming US presidential election and the international community's response to continued North Korean testing will likely contribute to how South Koreans evaluate the path ahead.

Source: https://www.eastasiaforum.org/2023/06/03/challenges-ahead-for-us-efforts-to-quell-south-koreas-nuclear-ambitions/, 03 June 2023.

OPINION – Manoj Kumar Mishra

Is it Ideology or Expediency Behind Emerging Russia-China-North Korean Axis Against Backdrop of Ukraine War?

Although it was at the end of 2019 that the North Korean supreme leader Kim Jong Un had declared his intention to break away from a self-imposed moratorium on testing nuclear weapons and long-range missiles, it was only in 2022 that the country tested a record number of missiles including the ones reaching the US mainland.

North Korea in the context of the continuing war over the Ukrainian territory seems to have been led to believe that it can circumvent sanctions with the assistance of Russia and China despite indulging in provocative actions such as testing and displaying nuclear weapons capabilities and missile power and technologies.

The sharp dividing-line between the transatlantic powers on the one hand and Russia, China and North Korea on the other against the backdrop of the Ukrainian war suggests Pyongyang can make most out of this rising polarity and go on developing nuclear and missile power in defiance of the non-proliferation regimes.

The sharp dividing-line between the transatlantic powers on the one hand and Russia, China and North Korea on the other against the backdrop of the Ukrainian war suggests Pyongyang can make most out of this rising polarity and go on developing nuclear and missile power in defiance of the non-proliferation regimes.

By doing so, it can force Washington to agree to a greater quantum of concessions over the existing sanctions on Pyongyang. Both Russia and China being permanent members of the UN Security Council can be expected to prevent it from punitive measures as well. Further, the transatlantic commitments to the ongoing war over the Ukrainian territory would prevent Washington from dedicating military and economic resources far exceeding the existing level towards another theatre – the Korean Peninsula.

The Ukrainian war scenario provided the convenient context for Pyongyang to practically break away from the self-imposed moratorium on nuclear weapons programme and test missiles capable of carrying nuclear warheads including testing of ICBMs.

The war over the Ukrainian territory has no simple and direct implications on North Korea's nuclear weapons programme. The lessons are complex yet Pyongyang would like to use it as a pretext for strengthening its nuclear and missiles ambitions further. The Ukrainian war scenario provided the convenient context for Pyongyang to practically break away from the self-imposed moratorium on nuclear weapons programme and test missiles capable of carrying nuclear warheads including testing of ICBMs.

At this critical juncture when Russia and Ukraine are engaged in a prolonged war that the North

Korean supreme leader considered to swiftly implement the declaration he made at the end of 2019. While North Korea has tested a variety of ballistic, cruise and hypersonic missiles, it has recently in April 2023 test-fired a solid-fuel ICBM after years of testing solid-fuel short-range missiles. Experts argue: 'solid-fuel ICBMs come ready-fuelled, and would therefore enable North Korea to strike the US with far less warning'.

China and North Korea with authoritarian leaders at the helm share similar viewpoints on the war over the Ukrainian territory. First, these states have hesitated to consider the Russian action an invasion. Second, these countries did not support economic sanctions measures against Russia.

Third, these powers put the blame on the role of the transatlantic military block – NATO for its intrusion into the Russian space and on the US for maintaining double standards on global issues. Russia and China share mutual interests in North Korea's provocative actions to distract the Transatlantic attention from Ukrainian hotspot and to prop up an anti-US Axis which could bypass the stringent sanctions regime and keep the US attention cleft between two hotspots.

While the Axis is gathering strength in the background of the war over Ukrainian territory, it will be an overstatement to say that these powers pursue identical interests and there is likely to be a convergence of interests and ideology in the long-term. Russia now faced with stringent economic sanctions and military debacles would like to see more countries to join anti-US camp, challenge its hegemony and assist it in circumventing stringent economic sanctions. North Korea is unhesitatingly doing this. In the year 2000, Russia and North Korea signed the Treaty on Friendship, Cooperation and Good-Neighborly Relations.

While the Axis is gathering strength in the background of the war over Ukrainian territory, it will be an overstatement to say that these powers pursue identical interests and there is likely to be a convergence of interests and ideology in the long-term.

This friendship treaty with Pyongyang enables Moscow to lend key security assistance too. However, this treaty contains no mutual defense clause unlike the agreement between China and North Korea. Sino-North Korean Mutual Aid and Cooperation Friendship Treaty signed between the two countries in 1961, on the other hand, includes provisions for mutual military assistance during war situations. These two treaties have been instrumental for Russia and China in bolstering the North Korean regime against the perceived American strategies towards weakening and then changing the regime in Pyongyang by replacing it with a pliable one.

So long as the US is perceived to having a larger military footprint in the region posing substantial and credible threat to the North Korean regime, these powers are likely to consider North Korean nuclear and missile power an effective deterrent against the possible US encroachments.

So long as the US is perceived to having a larger military footprint in the region posing substantial and credible threat to the North Korean regime, these powers are likely to consider North Korean nuclear and missile power an effective deterrent against the possible US encroachments.

A cursory look at the historical developments in the Korean Peninsula points to the fact that both China and Russia have a shared interest in peace and stability in the Peninsula and hence to contain North Korea's nuclear ambitions, these powers supported key UN Security Council sanctions against it. However, they have guarded against the US desire to roll back Pyongyang's nuclear weapon programme irreversibly while entrenching its own military presence through deployment of Missiles Defence Systems such as the THAAD and invigorating its security ties with its allies in Northeast Asian region such as Japan and South Korea including through bilateral military exercises.

Thus, these powers have been opposed to excessive sanctions and use of force at the UN Security Council against Pyongyang which could lead to its collapse and the US desire to install a pliable regime would be materialised. As North Korea embarks on a path of amassing nuclear weapons and ICBMs, China and Russia would remain uncomfortable with this development as it would provide a spur to instabilities in the Peninsula and would provide the US a rationale for enhancing its military presence and role in the Peninsula.

China and Russia share similar objectives on the questions of stability and denuclearisation of the Korean Peninsula also for reasons that both countries share border with North Korea (albeit Russia only shares a smaller 11miles border) and they remain apprehensive that instabilities and war on the Peninsula would cast immediate impacts and carry ominous repercussions including flight of refugees into their homelands.

China and Russia share similar objectives on the questions of stability and denuclearisation of the Korean Peninsula also for reasons that both countries share border with North Korea (albeit Russia only shares a smaller 11miles border) and they remain apprehensive that instabilities and war on the Peninsula would cast immediate impacts and carry ominous repercussions including flight of refugees into their homelands.

Russia and China also remain cautious about the fact that threats from North Korea's nuclear weapons programme would propel other countries of the region including South Korea and Japan to go nuclear. Japan and South Korea have frequently expressed their concerns emanating from Pyongyang and they are also willing to develop their military capabilities independent of the US security umbrella as well.

This apart, Russia seeks unification of Korea and peace in the Peninsula for integration between its underdeveloped far-east and Korean Peninsula through railways, transportation and different economic project networks. However, it would be a mistake to say that these powers pursue identical interests in the Korean Peninsula. China exercises far greater economic and military influence over the Northeast Asian region compared to Russia which it would seek to deepen further whereas Russia not only seeks to dilute its economic dependence on China but it is also in the look out for opportunities that could bring economic integration between its far-east and the Peninsula and with the broader region of Northeast Asia which could help it to attain the objectives of relieving it from economic dependence on China and establishing it as a major power in the region. Russia would prefer a multipolar Northeast Asian region where it can have consequential economic and security role rather than the region being dominated by China....

The arguments of some scholars that war over the Ukrainian soil increasingly widens the gulf between the two ideologies by pitting one against the other are misleading if we look at the shared interests emerging from the context of war. Ukrainian war theatre does not have any straightforward implications for the North Korean nuclear and missile provocations.

It is widely believed that Pyongyang does not want to be another Ukraine without nuclear weapons to deter and defend itself. However, it needs to be noted that Ukraine's denuclearization in 1994 was a wise decision in so far as it inherited nuclear warheads installed on its territory as a consequence of the dissolution of the Soviet Union and the ultimate control over which remained in the Russian hands.

So just to retain these without technical knowledge to use would have unintended and destabilizing consequences. North Korea on the other hand has developed an indigenous nuclear weapon programme. Those who overemphasize the dangerousness of the emerging axis in destabilizing the Korean Peninsula and broader Northeast Asian region citing the fate of Ukraine need to underline that unlike South Korea which is part of US military alliance, Ukraine is not a member of NATO nor does it share any bilateral

security arrangements with the US.

North Korea's missiles tests and nuclear provocations cannot easily destabilize the Korean Peninsula and Northeast Asian region as the US not only has strong military presence in the region, it has determined allies which can effectively deter a Korean war. The North Korean leader Kim Jong Un broke away from the self-imposed moratorium on the grounds that he did not receive expected concessions over the sanctions imposed on his country to resume dialogue on nuclear issues.

North Korea's missiles tests and nuclear provocations cannot easily destabilize the Korean Peninsula and Northeast Asian region as the US not only has strong military presence in the region, it has determined allies which can effectively deter a Korean war.

The American expectations that the North Korean regime would bend under the weight of sanctions and succumb to its desire of unconditional and unilateral denuclearization or else it would give way to another regime are being belied under the prevailing circumstances which the North Korean leader seeks to exploit. The leader observed restraint for a certain timeframe indicates that the objective of peace and stability in the Korean Peninsula is not unattainable.

Source: https://www.eurasiareview.com/03062023-is-it-ideology-or-expediency-behind-emerging-russia-china-north-korean-axis-against-backdrop-of-ukraine-war-analysis/, 03 June 2023.

OPINION – Kevin Ryan

Why Putin will Use Nuclear Weapons

However you try to spin it, the drone strikes that struck Moscow's wealthiest neighbourhoods on Tuesday night represented a grim turning point in Putin's flagging campaign against Ukraine. The surprise attacks — which killed eight people, and for which Kyiv has denied all responsibility — were the first against Russian civilians since the war began. They were also the most significant incursion into Russian territory since the Second World War.

Putin was quick to brand the strikes a "terrorist" act, while a rattled Yevgeny Prigozhin, head of the Wagner mercenaries, gave war chiefs a dressing-down for their inability to prevent three of eight drones from evading Russian air defences. Yet while this all provided a morale boost for the Ukrainian war effort, the question of retaliation hangs in the air.

Fifteen months into the war, Putin's bombs have not broken Ukraine. An influx of 300,000 new soldiers over the winter has done little to improve the fighting of Russian units, and the reported deployment of tanks from the Fifties has added fuel to the rumour that Russian munitions are running out. Indeed, Russian military commanders appear to have exhausted their ability to effectively respond to Ukrainian escalation. It is becoming clear, in my view, that the only way Russia can meet escalation with escalation is by introducing nuclear weapons.

Fifteen months into the war, Putin's bombs have not broken Ukraine. An influx of 300,000 new soldiers over the winter has done little to improve the fighting of Russian units, and the reported deployment of tanks from the Fifties has added fuel to the rumour that Russian munitions are running out.

Many Western experts say they take the threat of a Russian nuclear strike in Ukraine seriously, but make the mistake of asserting that the odds are low. Last month, for instance, Avril Haines, the US Director of National Intelligence, told a Senate hearing that Putin's weakened conventional force would make the Russian President more reliant on "asymmetric options" for deterrence, including nuclear capabilities — but she also said it was "very unlikely" that Moscow would do so. Speaking at the same hearing, the director of the Defense Intelligence Agency, Lieutenant General Scott Berrier, also assessed the chances as "unlikely".

And yet, there is strong evidence that Putin has resolved to use a tactical nuclear weapon in his war in Ukraine. In recent speeches and interviews,

he has argued that Russia faces an existential threat — a situation, under Russian policy, that warrants the use of nuclear weapons. He has also reshuffled his military leadership, so that the three generals responsible for the employment of tactical nuclear weapons now command his "special military operation" in Ukraine.

Moreover, while Nato has made it clear that it will not sanction the use of its members' nuclear weapons to defend Ukraine, Putin already has tactical reasons to deploy them: to save Russian soldiers' lives, to shorten the war, to destroy Ukrainian forces. He also has strategic reasons: to rejuvenate the deterrent value of his nuclear arsenal and to prove that he is not a bluffer. We must therefore assume he is ready to use them, most likely in response to his faltering military's inability to sufficiently escalate by conventional means. In other words, the nuclear genie is out of the bottle.

Today, a single nuclear strike in Ukraine could thwart a Ukrainian counterattack with little loss of Russian lives. For Moscow, this consideration is as much practical as it is moral: last year's large-scale mobilisation and increase in military units showed that Putin's army was too small for its task.

For much of the last 80 years, Russia's security has rested on two pillars whose relative strength has waxed and waned – its conventional ground forces and its nuclear weapons. The conventional forces have been used to influence, bully and force Russia's neighbours and adversaries to bend to its will. The nuclear forces were intended to deter the United States and the West from interfering militarily in Russia and its perceived zone of influence.

Since the end of the Cold War, however, Russia's conventional forces have at times struggled with their share of the task. To compensate, Russian leaders have had to rely on their nuclear forces to do both: strategic nuclear weapons to deter the West and tactical nuclear weapons to threaten neighbours.

Today, a single nuclear strike in Ukraine could thwart a Ukrainian counterattack with little loss of Russian lives. For Moscow, this consideration is as much practical as it is moral: last year's large-scale mobilisation and increase in military units showed that Putin's army was too small for its task. Nevertheless, Russia has managed to create only a few new battalions because most new personnel and equipment simply replaced losses in existing units. Putin and his military leaders are running out of the people and material needed to achieve his goals.

At the start of this year, Putin took several public steps to demonstrate that he is not bluffing about using nuclear weapons. In February, he signed a law "suspending" Russia's participation in New Start, the strategic nuclear arms treaty. This step officially ended joint inspections of American and Russian nuclear weapons sites and released Russia from the obligation to limit its number of strategic nuclear weapons — though Russia promised to do so.

Then, in March, Putin announced that he would station tactical nuclear weapons in Belarus, with a storage facility set to be built as early as July. Since Russia has already deployed nuclear-capable Iskander missile systems there — as well as thousands of troops — this would put nuclear delivery systems and warheads in close proximity to one another, greatly reducing the warning time of their use. Putin also suggested that Belarussian forces would be trained to use the weapons.

The Kremlin has taken these increasingly threatening steps in the belief that Nato and the West — in particular, the United States — is not paying attention to Russian demands on the global stage. In 2018, when Putin unveiled a bevy of new nuclear weapons, he warned: "You will listen to us now!" Except many didn't: four years later, his invasion of Ukraine was a wake-up call for those who had ignored him.

Despite this, some in Russia undoubtedly fear that the threat of a nuclear strike has begun to ring hollow. And for Putin, whose regime is vulnerable, to threaten a tactical nuclear attack without

following through now carries perhaps as much risk as striking. As a result, besides warning the West that he might use a nuclear weapon, the Kremlin has, step by step, prepared the Russian people with reasons why he should use nuclear weapons.

Among these justifications, Putin has repeatedly invoked "whataboutist" comparisons to the United States. When announcing plans for deployment of Russian nuclear weapons to Belarus, he said: "The United States has been doing this for decades. They have long…deployed their tactical nuclear weapons on the territory of their allied countries, Nato countries, in Europe, in six states…. We are going to do the same thing."

Putin has also repeatedly referenced American nuclear strikes on Hiroshima and Nagasaki and equated American goals then — to save soldiers' lives and shorten the war — with Russian goals today. He has, for instance, made clear to the Russian people that Moscow's red lines for the use of nuclear weapons, spelled out in its official documents, have all been crossed since the invasion.

Putin has also repeatedly referenced American nuclear strikes on Hiroshima and Nagasaki and equated American goals then — to save soldiers' lives and shorten the war — with Russian goals today. He has, for instance, made clear to the Russian people that Moscow's red lines for the use of nuclear weapons, spelled out in its official documents, have all been crossed since the invasion. These include the claim that the very survival of Russia is at stake in the current struggle — and at last month's Victory Day parade, Putin declared that the West's "goal is to achieve the collapse and destruction of our country".

Another of Russia's officially designated red lines is attacks "against critical governmental or military sites of the Russian Federation, disruption of which would undermine nuclear forces' response actions". Perhaps in light of this, Moscow has alleged that Ukrainian drones have struck strategic nuclear bomber planes inside Russia, and that Ukraine and the US are responsible for drones launched to assassinate Putin. All these claims, the real and the fabricated, are used to establish the pretext for Putin to use nuclear weapons.

In response, a number of Western observers have pointed out that, since we have not seen any movement of nuclear weapons, we have no tangible signs of intent to use them. I disagree. Last autumn, officials in Kyiv reported that Russia was firing "Kh-55 nuclear cruise missiles" with dummy warheads.

If the conventional forces could not successfully respond, a nuclear strike against the Ukrainian forces would be deployed. As he announced last September, on the night he illegally added four Ukrainian provinces to Russia: "If the territorial unity of our country is threatened, in order to protect Russia and our nation, we will unquestionably use all the weapons we have. This is no bluff.

Observers suggested these missiles — which are designed to carry only a nuclear weapon — were launched to erode Ukrainian air defences by "decoying" them into destroying the Kh-55s rather than missiles with conventional explosives. This claim makes little sense: missiles, even unarmed, would be too valuable for Russia to use as decoys. What does make sense, however, is launching Cold War-era missiles with dummy warheads to test their reliability for use in a real nuclear strike.

But what will trigger Putin's decision to launch? Most likely it will be the inability of the Russian military to meet his demands by conventional means. If a Ukrainian offensive threatens, for example, the loss of Crimea, Putin would seek an escalation of the fighting to prevent that loss. If the conventional forces could not successfully respond, a nuclear strike against the Ukrainian forces would be deployed. As he announced last September, on the night he illegally added four

Ukrainian provinces to Russia: "If the territorial unity of our country is threatened, in order to protect Russia and our nation, we will unquestionably use all the weapons we have. This is no bluff."

At home, too, there are push factors that may further embolden Putin. Most urgently, he is under pressure from Russian nationalists, who supported him in his rise to power, but are now vocal in their dissatisfaction. Some, like former FSB officer Igor Girkin, have openly criticised the senior military leadership, even Putin. That criticism may be morphing into opposition, forcing him to consider escalating his war before his conventional forces are ready.

Meanwhile, claims that Putin would be dissuaded from using nuclear weapons by important allies, such as China or India, are not borne out by the war thus far. Although Putin values the support of others, he has not shied away from putting that support at risk to get what he wants. None of this is to say that we in the West should pressure Ukraine to forgo its goal to liberate all seized territory. But it does mean that we should anticipate a nuclear attack and develop possible responses. As soon as Russia uses a nuclear weapon in Ukraine, the fallout will start to spread.

Deteriorating relations between Washington and Moscow has led to the dissolution of key nuclear treaties that helped maintain strategic stability since the end of World War II. The last remaining pact, known as the New START Treaty, is scheduled to expire in Feb. 2026, and President Putin has suspended Russia's participation.

Tens of thousands of Ukrainians will be dead, suffering or dealing with the effects of the explosion. Hundreds of millions of Europeans will be bracing for war. But 7 billion others around the globe will go about their business, alarmed but physically unaffected. Ultimately, this may prove more dangerous to the international order. The image that many people have of nuclear arms as civilisation-ending weapons will be erased. In its place, such weapons will have been "normalised" and, although tragic, acceptable in war. In this dramatically changed world, the burden is on the West to decide how to respond.

Source: https://unherd.com/2023/06/why-putin-will-use-nuclear-weapons/, 02 June 2023.

NUCLEAR STRATEGY

USA

Fearing 3-Way Arms Race, U.S. Seeks Nuclear Talks with Russia and China

In an overture designed to reverse years of stalled diplomacy, the Biden Administration sought June 2 to rekindle nuclear arms-control negotiations with Russia and China without preconditions. White House National Security Adviser Sullivan said the U.S. wants to establish a framework for nuclear arms reduction before the last remaining arms-control treaty between the U.S. and Russia expires. The public appeal to Moscow and Beijing comes amid escalating tensions with both nations, marked by the war in Ukraine and a series of public spats with China. Since President Biden took office in 2021, both Russia and China have opted to wield their arsenals to coerce neighbors and deter adversaries....

The challenges are stark. Deteriorating relations between Washington and Moscow has led to the dissolution of key nuclear treaties that helped maintain strategic stability since the end of World War II. The last remaining pact, known as the New START Treaty, is scheduled to expire in Feb. 2026, and President Putin has suspended Russia's participation.

The U.S. and Russia are not currently engaging in meaningful talks. If New START lapses without a follow-on deal, it would be the first time since 1972 that the two leading nuclear nations, who together control 90% of the world's nuclear warheads, were without an agreement governing their strategic stockpiles. China, meanwhile, has never been part of a nuclear-arms agreement and has shown no signs of reining in its weapons programs. China's unwillingness to engage with the U.S. has raised questions about the two

superpowers' ability to collaborate on nuclear arms reductions.

Arms control agreement take years to craft before all details are ironed out and agreed upon. "We are under no illusions about the task at hand, of the hard work, and likely the long work, needed to help lay a new, stronger foundation for this era," Sullivan said in his speech on June 2. Sullivan acknowledged the war in Ukraine posed a hurdle to such negotiations. President Putin has continually chosen to rattle his nuclear saber at the U.S. and NATO as they try to pressure him to abandon his unprovoked military campaign.

On June 1, the U.S. State Department announced it was going to halt information-sharing about its nuclear arms with Russia, a retaliatory move for Moscow's decision in February to withdraw from New START.

But Sullivan referenced instances during the Cold War when the two sides identified certain weapons deemed mutually menacing and worked to eliminate the threat. Even at the darkest moments, the U.S. and Soviet Union would discuss restrictions of nuclear arms. "There is a track record of our two countries being capable of engaging in these kinds of discussions in a way that serves our respective national interests and the broader common interest," Sullivan said.

While New START has been suspended, there are still elements of the 2010 agreement that are still in effect. The treaty limits the U.S. and Russia to 1,550 deployed nuclear warheads and 700 deployed heavy bombers and ballistic missiles, which both sides say they will hold to—even after it sunsets in 2026.

For more than a half-century, successive weapons treaties have led to a dramatic drop in the number of warheads across the globe. But in recent years, the diplomatic foundation that has helped preserve a fragile peace for generations is now exhibiting "major cracks," Sullivan said.

Many of the key nuclear treaties that helped maintain strategic stability and security since the end of World War II no longer exist, from the ABM Treaty and INF Treaty to The Treaty on Conventional Armed Forces in Europe. And even as Sullivan encouraged renewed discussions, there were fresh signs of the rupture between the U.S. and Russia. On June 1, the U.S. State Department announced it was going to halt information-sharing about its nuclear arms with Russia, a retaliatory move for Moscow's decision in February to withdraw from New START.

Last week, Russia and Belarus signed a formal agreement to deploy Russia's short-range nuclear weapons inside Belarus for the first time in three decades. Sullivan said this renewed nuclear brinkmanship was a reason to talk, rather than turn away. "It is in neither of our countries' interests to embark on an open-ended competition in strategic forces, and we are prepared to stick to the central limits as long as Russia does," Sullivan said. "Rather than waiting to resolve all of our bilateral differences, the United States is ready to engage Russia now to manage nuclear risks and develop a post-2026 arms control framework."

While New START has been suspended, there are still elements of the 2010 agreement that are still in effect. The treaty limits the U.S. and Russia to 1,550 deployed nuclear warheads and 700 deployed heavy bombers and ballistic missiles, which both sides say they will hold to—even after it sunsets in 2026.

"Today, as we face new threats, and as we face those cracks in our post-Cold War nuclear foundation, I not only believe that we can find this hope again, I believe that we must," Sullivan said. "Because when it comes to nuclear risks, what is at stake for our people and for our world is too important too consequential for our shared futures not to." Sullivan said.

Sullivan acknowledged any future agreement would not only be influenced by Russia's nuclear capabilities but also by China's growing ambitions. The rising power only has an arsenal

of 410 strategic warheads, according to a Federation of American Scientists' assessment. But the Pentagon estimates China's stockpile could grow to 1,500 by 2035, as it simultaneously constructs hundreds of new silos capable of launching long-range ballistic missiles, potentially targeting the U.S. and its far-flung nuclear forces.

The rising power only has an arsenal of 410 strategic warheads, according to a Federation of American Scientists' assessment. But the Pentagon estimates China's stockpile could grow to 1,500 by 2035, as it simultaneously constructs hundreds of new silos capable of launching long-range ballistic missiles, potentially targeting the U.S. and its far-flung nuclear forces.

The U.S. nuclear arsenal will not need to match the combined nuclear forces of both China and Russia, Sullivan said, despite signs that the two nations have increased military collaboration in recent years. The White House believes such a strategy risks a volatile three-way arms race, Sullivan said.

"The United States does not need to increase our nuclear forces to outnumber the combined total of our competitors in order to successfully deter them," he said. "We've been there. We've learned that lesson. Nor does the United States need to deploy ever more dangerous nuclear weapons to maintain deterrence. Rather, effective deterrence means that we have a better approach not a 'more' approach."

The P-5 provides an opportunity to manage nuclear risk and arms race pressures through a mix of dialogue, transparency, and agreements. For example, formalizing a missile launch notification regime across the P-5 is a straightforward measure. That is simply common sense," Sullivan told the Arms Control Association.

Source: https://time.com/6284556/nuclear-weapons-talks-us-russia-china/, 02 June 2023.

White House Pushes P-5 Agreement on Missile Launch Notification, Prods China to Talk

As bilateral talks sputter with Russia and especially China on strategic security threats from nuclear weapons to space, the Biden administration is turning to multilateral forums as pathways to reducing conflict risks — including seeking a missile launch notification agreement among the five nuclear-armed permanent members of the UN Security Council, White House National Security Advisor Sullivan said on June 2.

"The P-5 provides an opportunity to manage nuclear risk and arms race pressures through a mix of dialogue, transparency, and agreements. For example, formalizing a missile launch notification regime across the P-5 is a straightforward measure. That is simply common sense," Sullivan told the Arms Control Association.

"It's a small step that will help reduce the risk of misperception and miscalculation in times of crisis, and one that could potentially build more momentum towards further measures to manage nuclear risks and an arms race — from maintaining a human in the loop for command control and deployment of nuclear weapons, to establishing crisis communications channels among the P-5 capitals, to committing to transparency on nuclear policy doctrine and budgeting, to setting up guardrails for managing the interplay between non-nuclear strategic capabilities and nuclear deterrence." Sullivan said.

The P-5 consists of the United States, Russia, China, France and the United Kingdom. Sullivan explained that among them, there already are a web of bilateral and trilateral agreements on launch notification. Those include the 1988 Ballistic Missile Launch Notification Agreement between the US and Russia, and a similar accord between Russia and China. But no single agreement stretches to all five, complicating information-sharing.

Sullivan's remarks come in the wake of a State Department announcement on June 1 that

Washington has taken additional "countermeasures" in response to Russia's continued violation of the 2010 New START Treaty that caps both sides nuclear arsenals — part of Moscow's hardline attitude since its invasion of Ukraine last February.

The US said it acted after Russia failed "to fulfill its obligation to provide its biannual data update on March 30," according to a State Department fact sheet. The US countermeasures include — somewhat counter to Sullivan's entreaty — withholding its own bilateral exchange data, treaty-required notifications on things like the status of missile launchers, and telemetry about intercontinental and submarine launched ballistic missiles. In addition, the White House is blocking Russian inspection activities, including revoking visas for inspectors.

The US countermeasures include — somewhat counter to Sullivan's entreaty — withholding its own bilateral exchange data, treaty-required notifications on things like the status of missile launchers, and telemetry about intercontinental and submarine launched ballistic missiles.

However, Sullivan stressed that the New START Treaty remains important to US interests, and that both sides continue to see the value in abiding by its basic provisions that limit their nuclear arsenals.... Sullivan further invoked P-5 discussions, as well as wider multilateral approaches, as a potential way to bring a recalcitrant China to the table not just for nuclear arms control talks as Beijing continues to increase its ICBM arsenal, but across a wide range of security issues — from the PLA's activities in the South China Sea to the recent spy balloon incursion to Beijing's expansion of its military space presence....

Source: https://breakingdefense.com/2023/06/white-house-pushes-p-5-agreement-on-missile-launch-notification-prods-china-to-talk/, 02 June 2023.

U.S. Retaliates for Russia's Suspension of New START Treaty by Revoking Visas of Nuclear Inspectors

The Biden administration is retaliating for Russia's suspension of the New START nuclear treaty, announcing on June 1 that it is revoking the visas of Russian nuclear inspectors, denying pending applications for new monitors and cancelling standard clearances for Russian aircraft to enter U.S. airspace.

The Biden administration is retaliating for Russia's suspension of the New START nuclear treaty, announcing on June 1 that it is revoking the visas of Russian nuclear inspectors, denying pending applications for new monitors and cancelling standard clearances for Russian aircraft to enter U.S. airspace.

The State Department said it was taking those steps and others in response to Russia's "ongoing violations" of New START, the last arms control treaty remaining between the two countries, which are currently at severe odds over the Russian invasion of Ukraine....The department said the visa revocations and application denials, as well as a U.S. decision to stop sharing information on the status or locations of missiles and telemetry data on test launches with Russia, were consistent with international law because of Russia's actions. The U.S. will, however, continue to notify Russia when it conducts test launches, it said, adding that the steps it was taking were reversible provided Moscow returns to compliance with the treaty.

Russia suspended its participation in New START in February in a move that the U.S. said was "legally invalid." Immediately afterward Moscow curtailed its adherence to the accord. Allowing inspections of weapons sites and providing information on the placement of intercontinental and submarine-based ballistic missiles and their test launches are critical components of New START, which then-Presidents Obama and Medvedev signed in 2010....

Source: https://www.ctvnews.ca/world/u-s-retaliates-for-russia-s-suspension-of-new-start-

treaty-by-revoking-visas-of-nuclear-inspectors-1.6424255, 02 June 2023.

BALLISTIC MISSILE DEFENCE

UKRAINE

Zelensky: Ukraine Needs More Patriot Air Defense Systems to Fully Protect its Airspace

President Zelensky said during a press briefing on June 2 that it is "very challenging" for Ukraine to receive the amount of Patriot air defense system it needs to fully protect its skies due to the waiting time to receive them. "Our task is not 70-75% target destruction, but 100%. Yes, it is indeed an ambitious goal. It is very challenging, not only due to the waiting time for Patriot air defense systems but also for the missiles they require," Zelensky said. According to Zelensky, Ukraine knows exactly how many Patriot systems it needs to protect its air space.

Our task is not 70-75% target destruction, but 100%. Yes, it is indeed an ambitious goal. It is very challenging, not only due to the waiting time for Patriot air defense systems but also for the missiles they require," Zelensky said.

During the European Political Community in Moldova on June 1, Zelensky held meetings with the leaders of Germany, Denmark, the Netherlands, and the European Union about creating a so-called Patriot coalition. "The question is not whether each of these countries can provide us with this," Zelensky said, adding that it was a matter of helping Ukraine to procure the air defense system. "Some of them have the ability to provide it, and others have different means of aiding us, including political and personal relationships with states that have the relevant missile defense systems. There are those that have finances, others that have influence," Zelensky explained.

The Patriot air defense system has played a vital role in protecting Ukrainian cities and minimizing casualties during Russian attacks. Ukraine's Air Force confirmed in early May that it had used the Patriot air defense system to shoot down a Russian Kh-47 Kinzhal ballistic missile for the first time since the start of the full-scale invasion. U.S. National Security Council Spokesperson John Kirby announced on May 31 that the U.S. would provide Ukraine with more air defense, including additional missiles for the Patriot air defense system, in response to increased Russian attacks over the past month.

Source: https://news.yahoo.com...-_RxZoy4SA7GD1LEkL, 03 June 2023.

USA–JAPAN–SOUTH KOREA

US-Japan-Republic of Korea Trilateral Ministerial Meeting Joint Press Statement

U.S. Secretary of Defense Lloyd J. Austin III, Japanese Minister of Defense Hamada Yasukazu, and Republic of Korea Minister of National Defense Lee Jong-Sup convened a Trilateral Ministerial Meeting in Singapore, June 3, 2023. During the meeting, the three leaders discussed the growing nuclear and missile threats from the DPRK as well as efforts to enhance trilateral security exercises and address common security challenges in the Indo-Pacific region.

The Secretary and the two Ministers pledged that the United States, Japan, and the ROK will cooperate closely toward their shared commitment to achieve the complete denuclearization of the Korean Peninsula in accordance with UNSC resolutions. They shared their deep concerns about, and condemnation of, the DPRK's WMD and ballistic missile programs.

The Secretary and the two Ministers pledged that the United States, Japan, and the ROK will cooperate closely toward their shared commitment to achieve the complete denuclearization of the Korean Peninsula in accordance with UNSC resolutions. They shared their deep concerns about, and condemnation of, the DPRK's WMD and ballistic missile programs, which pose a grave threat to

international peace and stability, and they committed to address these concerns through concerted trilateral cooperation.

In particular, the Secretary and the two Ministers condemned DPRK's recent claimed space launch using ballistic missile technology as it constitutes a serious violation of relevant UNSCRs. They also renewed their determination to respond firmly to the DPRK threat through increased trilateral cooperation as well as cooperation with the international community. Additionally, they called for full implementation by the international community of relevant UNSCRs.

In line with the commitments made by U.S. President Biden, Japanese Prime Minister Kishida, and ROK President Yoon at the Phnom Penh Summit on November 13, 2022, the Secretary and the two Ministers recognized trilateral efforts to activate a data sharing mechanism to exchange real-time missile warning data before the end of the year in order to improve each country's ability to detect and assess missiles launched by DPRK.

They underscored the importance of sustained international efforts to deter, disrupt, and ultimately eliminate the DPRK's illicit ship-to-ship transfers. They urged the DPRK to immediately cease its irresponsible actions that create tension on the Korean peninsula and in the region, and to abide by its obligations under all relevant UNSCRs.

In line with the commitments made by U.S. President Biden, Japanese Prime Minister Kishida, and ROK President Yoon at the Phnom Penh Summit on November 13, 2022, the Secretary and the two Ministers recognized trilateral efforts to activate a data sharing mechanism to exchange real-time missile warning data before the end of the year in order to improve each country's ability to detect and assess missiles launched by DPRK.

The Secretary and the two Ministers discussed the ongoing progress being made through technical working-level consultations and noted that this is a major step for deterrence, peace and stability. They also pledged to make further progress toward operationalizing the trilateral mechanism initially over the next few months.

The Secretary and the two Ministers further affirmed the three sides will utilize the 2014 U.S.-Japan-ROK Trilateral Information Sharing Arrangement to facilitate coordination and cooperation among all three sides. They also welcomed the recent normalization of the bilateral General Security of Military Information Agreement between Japan and the ROK.

In addition, they concurred on the need to contribute to defense-related confidence building measures among the countries in the region and committed to strengthening cooperation to institutionalize such efforts. The Secretary and the two Ministers discussed other regional security issues as well as DPRK threats and all reiterated the importance of deepening trilateral cooperation on key issues to promote a free and open Indo-Pacific, including information sharing, high-level policy consultations, and trilateral exercises. They further discussed steps to follow up on these issues.

They committed to regularizing defensive exercises that contribute to strengthening trilateral responses to the DPRK's nuclear and missile threats and deterring against those threats, including anti-submarine exercises and missile defense exercises.... The United States reaffirmed its steadfast alliance commitments to Japan and the ROK backed by the full range of U.S. capabilities, including nuclear.

Additionally, the Secretary and the two Ministers affirmed their commitment to swiftly conduct maritime interdiction exercises and anti-piracy exercises, and they pledged to further identify other areas, including disaster relief and humanitarian assistance, where the three countries intend to expand trilateral cooperation.

They committed to regularizing defensive exercises that contribute to strengthening trilateral responses to the DPRK's nuclear and missile threats and deterring against those threats, including anti-submarine exercises and missile defense exercises…. The United States reaffirmed its steadfast alliance commitments to Japan and the ROK backed by the full range of U.S. capabilities, including nuclear. Japan and the ROK highlighted the importance of their bilateral ties and trilateral cooperation to protect and advance their shared security goals. The Secretary and the two Ministers committed to work closely together for peace and stability in the region and around the world.

Source: https://www.defense.gov/News/Releases/Release/Article/3415860/united-states-japan-republic-of-korea-trilateral-ministerial-meeting-tmm-joint/, 03 June 2023.

NUCLEAR ENERGY

FRANCE–GERMANY

France, Germany Dispute Over Nuclear Energy Leaves EU Deadlocked on Renewables

France is seeking to reopen negotiations over a key Green Deal law in an effort to ensure a greater role for nuclear in Europe's energy transition, a move fiercely opposed by Germany, leaving the talks in deadlock….Germany — which just shuttered its last nuclear plants in April — has teamed up with other member states to block the move, the people said, asking for anonymity because the discussions are private. Berlin favors approving the law in its current form as soon as possible, according to the Economy Ministry.

France is seeking to reopen negotiations over a key Green Deal law in an effort to ensure a greater role for nuclear in Europe's energy transition, a move fiercely opposed by Germany, leaving the talks in deadlock.

The dispute pits Europe's two largest economies against each other over the role of nuclear power as the region tries to speed the transition to a low-carbon economy while recovering from a historic energy crisis. The EU framework deal agreed in March would raise the region's 2030 renewable target to 42.5% of total energy consumption, while providing a small role for nuclear.

Sweden is now seeking a solution acceptable to a weighted majority of member states before the end of its presidency on June 30. Any further delay would risk undermining the objectives of the Green Deal — the EU's plan for carbon neutrality — at a time when the ambitious pace of the overhaul already faces pushback from some member states and industry groups.

The Swedish presidency said talks with France are ongoing, declining to disclose further details. President Macron, whose country relies on nuclear energy for the bulk of its electricity production, said this week that EU member states should retain their sovereign right to choose energy sources. The nation is betting on the production of hydrogen using power generated by its atomic plants to meet climate goals.

"We want to create industrial partnerships in hydrogen and nuclear to foster job creation on our soil," Macron said at a press conference in Bratislava. "We've inherited national energy mixes and now we are fragmenting the production of green, low-carbon hydrogen of the future and the energies of tomorrow. This is an aberration for Europe." Macron said. …Macron is set to discuss energy issues with Chancellor Scholz over dinner in Potsdam near Berlin on June 6 to try and come up with a common position.

The dispute pits Europe's two largest economies against each other over the role of nuclear power as the region tries to speed the transition to a low-carbon economy while recovering from a historic energy crisis.

Source: https://www.bnnbloomberg.ca/france-germany-dispute-over-nuclear-energy-leaves-eu-deadlocked-on-renewables-1.1928137, 02 June 2023.

GENERAL

What Is Food Fraud, and How Can Nuclear Science Detect It?

Food fraud can be defined as any intentional action, taken to deceive customers about the quality and content of the food products for financial gain. The selling of fake food around the world has become a highly lucrative illegal activity. While estimating the global impact is hard because it is designed to avoid detection, some experts are assessing that it could represent 40 billion dollars a year....

Jointly with the Food and Agriculture Organization (FAO) of the UN, the IAEA supports its Member States in the use of nuclear and complementary techniques for science-based solutions to improve food safety, food authenticity, and security, as well as sustainable agricultural practices. The Joint FAO/IAEA Center of Nuclear Techniques in Food and Agriculture is working on nuclear technologies to improve the safety and quality of food products, tracking the origin of food products and checking their authenticity.

Every element around us has its own chemical identity. This identity is based on its atomic composition, which consists of neutrons, protons, and electrons. Atoms with the same number of protons but different numbers of neutrons are called isotopes – these can help scientists to determine if a product is genuine. Stable isotope ratios in food can vary because of different factors, such as: when, where, and under what environmental conditions the food was produced. For example, stable carbon isotope ratios of tomatoes from Northern Europe grown in a winter greenhouse will vary from the carbon isotope ratios of soil grown tomatoes, harvested in summer in South America.

Stable isotopes are measured using specialized equipment, that can detect the very small differences in the ratios of their heavy and light forms and this information can be used to detect the origin of food. Stable isotope ratios are like nature's 'fingerprints' or signatures on food.

This hidden evidence can provide information on whether the foods we are buying consist of the authentic ingredients described on the label or has been falsified. By tracing these isotopic fingerprints, scientists can also track the geographical or botanical provenance of food.

Isotopes also allow to detect the adulteration, or complete substitution, of food with cheap ingredients that have identical chemical structures, but different isotopic signatures. For example, synthetic flavors instead of natural, high fructose corn syrup in honey; or orange juice made from concentrate instead of freshly squeezed.

Jointly with the Food and Agriculture Organization (FAO) of the UN, the IAEA supports its Member States in the use of nuclear and complementary techniques for science-based solutions to improve food safety, food authenticity, and security, as well as sustainable agricultural practices. The Joint FAO/IAEA Center of Nuclear Techniques in Food and Agriculture is working on nuclear technologies to improve the safety and quality of food products, tracking the origin of food products and checking their authenticity. The Joint FAO/IAEA Centre supports its member States in improving their laboratory and regulatory capacity to trade safe and high-quality food products and verify their authenticity using stable isotope measurements.

The Joint FAO/IAEA Centre gathers best practices and provides guidance on the use of nuclear techniques for the verification of origin of food products, for example dairy products. The Joint FAO/IAEA Centre conducts various Coordinated Research Projects on use of nuclear and complementary techniques, for instance, the identification of food fraud or products with high-value labelling claims.

Source: https://www.iaea.org/newscenter/news/what-is-food-fraud-and-how-can-nuclear-science-detect-it, 07 June 2023.

INDIA

Nuclear Power Generation Falls in FY23; the only Energy Source to Decline

India's nuclear power generation declined 2.66% in FY23. It's the only major energy source registering a decline in the fiscal. In comparison, power generation by thermal units increased 8.20%, wind and solar by 19.09% and hydro by 6.87%. As per data released by NPCIL, in FY23, the total gross generation from a total capacity of 6,780 MW was 45,855 million units against 47,112 million units generated in FY22.

India's nuclear power generation declined 2.66% in FY23. It's the only major energy source registering a decline in the fiscal. In comparison, power generation by thermal units increased 8.20%, wind and solar by 19.09% and hydro by 6.87%.

Though on paper there are 22 reactors with a total capacity of 6,780 MW, 640 MW is out of generation. Units 1 and 2 of 160 MW each at Tarapur (Maharashtra) is out of generation and is mostly on the way out. Similarly, the first unit at Rajasthan with a capacity of 100 MW is out of generation since 2004 and is likely to be shutdown.

The first unit with a capacity of 220 MW at Madras Atomic Power Station (MAPS) is out of generation since 2018-19. Thus, in effect the total generation of 45,855 million units is from a capacity of 6,140 MW…. Units 1 and 2 of Tarapur started power generation in 1969 but have been out of generation since 2021-22 after nearly 52 years. They are likely to be shut down permanently.

In Tarapur, the unit 3 with a capacity of 540 MW has generated 4,636 million units in 2022-23 compared to the previous year when the generation was 3,829 MU. But Unit 4 with a capacity of 540 MW has generated 4,349 MU in 2022-23 compared to 4,774 MU in 2021-22.

"TAPS used to feed Maharashtra and Gujarat every day - nearly 20 per cent of the total electricity supplied to the region. Its closure would therefore cripple power production in these highly industrialised states," said the official. Similarly, Rajasthan Atomic Power Station (RAPS) Unit 1 is out of generation since 2004 and not likely to generate in the present year also.

Tamil Nadu power utilities have voiced concern over the shutdown of Unit-1 of MAPS at Kalpakkam since 2018 due to issues in the reactor. Tamil Nadu gets 75% of the power generated from the two units of 220 MW each in MAPS. "NPCIL has pointed out that Unit-1 was suffering technical issues and unlikely to come online in the near future," said a senior Tangedco official.

In Tarapur, the unit 3 with a capacity of 540 MW has generated 4,636 million units in 2022-23 compared to the previous year when the generation was 3,829 MU. But Unit 4 with a capacity of 540 MW has generated 4,349 MU in 2022-23 compared to 4,774 MU in 2021-22.

In Kaiga (Karnataka), out of the 4 units, Units 2 and 4 have generated less power in 2022-23. In Narora, both the two units have generated less power in the last financial year. The two units at Kakrapar have generated more power in the last financial year compared to the previous year.

Kudankulam, which has the maximum nuclear power capacity of 2,000 MW in two units, has generated a total of 14,226 million units which is 31% of the total nuclear power generation in the country. "The two units which faced several hiccups at the beginning has been working continuously in the last few years and has generated above 14,000 million units in the last financial year. In the present year also, we will generate more power than the last financial year," said the NPCIL official….

"Compared to the UTVS fuel model, which was supplied to Kudankulam NPP previously, TVS-2M fuel assemblies have a number of advantages making them more reliable and cost-efficient. First, it is the rigidity of a bundle: because of the welded frame, the fuel assemblies in the reactor

core retain their geometry, the spacer grids protect fuel rod cladding from fretting wear (preventing from depressurisation), and the additional spacer grid makes fuel assemblies more vibration-resistant," said Rosatom, a Russia-based company…. "Unless we get more nuclear fuel it is not possible to increase the nuclear power generation in the country," said the official.

Source: https://www.fortuneindia. com/opinion/nuclear-power-generation-falls-in-fy23-the-only-energy-source-to-decline/112899, 02 June 2023.

PAKISTAN

Karachi 3 Receives Operating Licence

The PNRA has granted an operating licence for unit 3 of the Karachi nuclear power plant, the second of two Chinese-supplied Hualong One reactors at the site. Units 2 and 3 of the Karachi site - near Paradise Point in the province of Sindh - are the first exports of China National Nuclear Corporation's 1100 MWe Hualong One pressurised water reactor, which is also promoted on the international market as HPR1000.

The PNRA has granted an operating licence for unit 3 of the Karachi nuclear power plant, the second of two Chinese-supplied Hualong One reactors at the site. Units 2 and 3 of the Karachi site - near Paradise Point in the province of Sindh - are the first exports of China National Nuclear Corporation's 1100 MWe Hualong One pressurised water reactor, which is also promoted on the international market as HPR1000.

Construction of unit 2 began in 2015, with that of unit 3 following in May 2016. Karachi 2 achieved first criticality in February 2021 and was connected to the grid the following month after the completion of commissioning tests…. Unit 3 achieved first criticality on 21 February 2022 and was connected to the grid on 4 March. It passed acceptance tests on 18 April 2022, marking its entry into commercial operation. A ceremony has been held to mark the inauguration of unit 3 in February this year.

After the successful completion of criticality and pre-operational tests, the Pakistan Atomic Energy Commission applied for the issuance of an operating licence for Karachi 3 in October 2022. PNRA said "upon completion of regulatory review and assessment and inspection processes of the licensing submissions and satisfactory resolution of all regulatory issues", it issued the operating licence on 31 May….

Source: https://www.world-nuclear-news.org/Articles/Karachi-3-receives-operating-licence, 01 June 2023.

TURKEY

Concreting of Akkuyu 1's Inner Containment Dome Completed

The completion of concreting of the inner containment dome at Akkuyu 1 is seen as a key construction moment at Turkey's first nuclear power plant. In total, more than 3200 cubic metres was poured, with 422 tonnes of rebars installed and the completed walls are 1200mm thick. Anastasia Zoteeva, CEO of the Akkuyu Nuclear project company, called it a key event in the construction process and said: "I would like to thank all the builders for their maximum dedication and high level of professionalism. The team's cohesive work allows us to build all four power units simultaneously. At unit 1, after the successful completion of the internal containment construction stage and the delivery of the first batch of nuclear fuel, we go to the finish line. External containment installation and other acceptance works are to be performed prior to the completion of the first power unit."

The completion of concreting of the inner containment dome at Akkuyu 1 is seen as a key construction moment at Turkey's first nuclear power plant. In total, more than 3200 cubic metres was poured, with 422 tonnes of rebars installed and the completed walls are 1200mm thick.

The project company said the concrete used has "a high liquidity, which allows it to self-compact and fully fill the structure space under its own weight, while maintaining high water-retaining capacity, liability, strength and homogeneity of its composition". It is also tested on a regular basis, including inspections at the factory and at the Akkuyu construction site....

In April, a ceremony was held to mark the arrival of nuclear fuel at the site. Rosatom said the aim was for physical start-up to take place next year. Turkey says that when all four units are operational, which it hopes will be in 2028, it will provide about 10% of the country's electricity needs.

Source: https://world-nuclear-news.org/Articles/Concreting-of-Akkuyu-1-s-inner-containment-dome-co, 02 June 2023.

USA

Record Level of US Support for Nuclear Continues

US public support for nuclear energy has remained at a record high level for the third consecutive year, according to the latest survey by Bisconti Research Inc. The results show three quarters of the public favour nuclear energy, and about seven in ten support the construction of more nuclear power plants.

The National Nuclear Energy Public Opinion Survey - conducted between 28 April and 5 May - included 1000 nationally representative US adults, with a margin of error of plus or minus three percentage points, and was conducted by Bisconti with the Quest Mindshare Online Panel. A total of 87 national surveys have been conducted since 1983.

The poll found that 76% of respondents said they strongly or somewhat favoured the use of nuclear energy as one of the ways to provide electricity in the USA, while 24% were opposed. Those figures are statistically unchanged since 2021, Bisconti noted. In the previous decade, favourability had plateaued in the 60% range.

The poll found that 76% of respondents said they strongly or somewhat favoured the use of nuclear energy as one of the ways to provide electricity in the USA, while 24% were opposed. Those figures are statistically unchanged since 2021, Bisconti noted. In the previous decade, favourability had plateaued in the 60% range.

"Favourable reasons are primarily about the need for this energy because it is affordable, reliable, and efficient and about environmental benefits relating to clean air and climate change," Bisconti said. "The themes of energy independence and energy security that have re-emerged in policy discussions due to Russia's war in Ukraine are not yet cited as major reasons for opinions about nuclear energy." Bisconti said.

"Unfavourable opinions are primarily focused on danger, although some did mention that nuclear energy is becoming safer. In open-ended questions about reasons for opinions about nuclear energy, few even mention waste." Bisconti said. The more informed people feel about nuclear energy, the more they favour it, the survey showed. In 2023, of those who said they felt very well informed about nuclear energy, 74% strongly favoured it, while only 4% were strongly opposed.

The more informed people feel about nuclear energy, the more they favour it, the survey showed. In 2023, of those who said they felt very well informed about nuclear energy, 74% strongly favoured it, while only 4% were strongly opposed.

Most Americans were found to hold favorable opinions about nuclear energy and its role. Nuclear energy will be important in meeting the nation's electricity needs in the years ahead, according to 86% of respondents, while 89% agreed that the licenses of nuclear power plants that continue to meet federal safety standards should be renewed.

87% agreed that the USA should prepare now so that advanced-design nuclear power plants will be available to provide electricity, and 71% agreed it should definitely build more nuclear power

plants in the future. "Support for nuclear energy remains high in the context of concerns about energy and the environment," according to Bisconti. "Nuclear energy's benefits are being mentioned in the public discourse and this information is being heard." Bisconti said....

Source: https://www.world-nuclear-news.org/Articles/Record-level-of-US-support-for-nuclear-continues, 02 June 2023.

Georgia Power announced on 29 May 2023 Vogtle Unit 3 has safely reached 100 percent power, marking a major milestone towards commercial operation and service for customers. This milestone marks the maximum energy the unit is licensed to produce in the reactor core and is the first time the unit has reached its expected output of approximately 1,100 electric MW, which can power an estimated 500,000 homes and businesses.

Vogtle Unit 3 Reaches 100 Percent Energy Output for the First Time

Georgia Power announced on 29 May 2023 Vogtle Unit 3 has safely reached 100 percent power, marking a major milestone towards commercial operation and service for customers. This milestone marks the maximum energy the unit is licensed to produce in the reactor core and is the first time the unit has reached its expected output of approximately 1,100 electric MW, which can power an estimated 500,000 homes and businesses.

Canada's Ontario Power Generation (OPG) will provide operator services to Poland's Orlen Synthos Green Energy (OSGE) under a letter of intent signed between the partners, extending their existing cooperation on the deployment of SMRs. The document was signed on 2 June at OPG's Darlington New Nuclear Project during a site visit by Polish Prime Minister Mateusz Morawiecki.

"Unit 3 is currently undergoing testing through the full range of plant operations, including safely running at various power levels and operating through real-life conditions just as it will over the next 60 to 80 years after the unit enters commercial operation," said Kim Greene, chairman, president and CEO of Georgia Power. "As we enter the final stages of startup testing, reaching 100 percent power for the first time is an exciting milestone. It tells us we're close to finishing the unit safely and bringing it online to power Georgia homes and businesses with reliable, emissions-free energy for decades to come."

In alignment with the testing performed throughout power ascension, testing at the 100 percent power level is focused on the operation of the reactor, plant control systems for the reactor and support systems, and integrated plant operations. Plant performance is monitored at various conditions and data is gathered and evaluated by site engineers. With the unit reaching full power for the first time, other tests must be performed at this power level before the unit is available for reliable dispatch in accordance with its combined operating license.

Once all startup testing is successfully completed and the unit is available for reliable dispatch, Vogtle Unit 3 will enter commercial operation. Unit 3 is projected to be placed in service during June 2023.

Source: https://www.georgiapower.com/company/news-center/2023-articles/vogtle-unit-3-reaches-100-percent-energy-output.html?fbclid=IwAR0Q69ZVR16pT Y5kVmfo8OuCrweujRPCRj5ci_rU_pq0PGBtCX9V4 _ Ubhic, 29 May 2023.

SMALL MODULAR REACTORS

CANADA–POLAND

OPG and OSGE Enhance Cooperation on SMRs

Canada's Ontario Power Generation (OPG) will provide operator services to Poland's Orlen Synthos Green Energy (OSGE) under a letter of intent signed between the partners, extending their existing cooperation on the deployment of SMRs. The document was signed on 2 June at OPG's Darlington New Nuclear Project during a

site visit by Polish Prime Minister Mateusz Morawiecki. The letter of intent is aimed at concluding future agreements under which OPG and its subsidiaries could provide operator services for SMR reactors to OSGE in connection with the deployment of SMRs in Poland and other European countries.

The partnership would include a number of SMR-related activities including: development and deployment; operations and maintenance; operator training; commissioning; and regulatory support. "Building competences and training staff is one of the critical elements necessary to introduce nuclear energy in Poland, and OPG is the largest and most competent operator of nuclear power plants in Canada with over 50 years of experience," OSGE said.

In March, GE Hitachi Nuclear Energy (GEH), Tennessee Valley Authority (TVA), OPG and OSGE agreed to work together to advance the global deployment of the GEH BWRX-300 SMR through collaboration on development of a standard design. A master services agreement was signed by Laurentis Energy Partners - a wholly-owned commercial subsidiary of OPG - and OSGE in October 2022 to support the development and deployment of SMRs in Poland. The agreement enabled international collaboration between the two companies, beginning with early project planning.

On 31 October last year, OPG submitted an application to the Canadian Nuclear Safety Commission (CNSC) for a licence to construct a BWRX-300 at the Darlington site. This licence is required before any nuclear construction work on the SMR can begin. However, site preparation work is already under way at the site. OPG expects to make a construction decision by the end of 2024 and has set a preliminary target date of 2028 for plant operations....

The most modern nuclear solutions in the world will soon be developed in Canada and Poland," Prime Minister Morawiecki said. "This is a milestone in ensuring a stable source of energy supplies for Poland. This, in turn, is the basis for healthy, good and fast economic development for our country." Morawiecki said.

"The most modern nuclear solutions in the world will soon be developed in Canada and Poland," Prime Minister Morawiecki said. "This is a milestone in ensuring a stable source of energy supplies for Poland. This, in turn, is the basis for healthy, good and fast economic development for our country." Morawiecki said. "Both Canada and Poland are committed to the development of clean and renewable energy technologies that will foster energy security, advance our shared climate objectives, and lead to new commercial opportunities, including in off-shore wind," Morawiecki and Canadian Prime Minister Justin Trudeau said in a joint statement....

The use of nuclear power from small modular reactors creates a promising, carbon-free energy option for Purdue University that should be further explored, according to an interim report from Purdue and North Carolina-based Duke Energy. The partners began a feasibility study in April 2022 and spent a year studying whether advanced nuclear technologies could power Purdue's West Lafayette campus and supply excess energy to the state's electric grid in the 2030s and beyond.

Source: https://world-nuclear-news.org/Articles/OPG-and-OSGE-enhance-cooperation-on-SMRs, 05 June 2023.

USA

Small Modular Nuclear could Bring Energy Benefits for Purdue

The use of nuclear power from small modular reactors creates a promising, carbon-free energy option for Purdue University that should be further explored, according to an interim report from Purdue and North Carolina-based Duke Energy. The partners began a feasibility study in April 2022 and spent a year studying whether advanced nuclear technologies could power Purdue's West Lafayette campus and supply excess energy to the state's electric grid in the 2030s and beyond.

While the interim report said no decision is being

made yet on whether to build a small modular reactor, or SMR, at Purdue or on Duke's Indiana system, Purdue Associate Vice President for Administrative Operations Ryan Gallagher said the partners would be well served to continue investigating the option.

Gallagher told Inside INdiana Business that Purdue may be well situated to help with not only public education around the use of nuclear for energy needs, but also workforce development. ...Gallagher said efforts are being made at the federal level around nuclear energy, including the U.S. Department of Energy's Advanced Reactor Demonstration Program, which is initially investing $160 million to support the development of SMRs.... Purdue and Duke said in the report that a more detailed analysis of the technology and capital costs is expected, but it is "simply too soon in the technology's development to provide a reliable estimate of costs." Gallagher said.

Department of Energy's Advanced Reactor Demonstration Program, which is initially investing $160 million to support the development of SMRs.... Purdue and Duke said in the report that a more detailed analysis of the technology and capital costs is expected, but it is "simply too soon in the technology's development to provide a reliable estimate of costs." Gallagher said.

Gallagher said Purdue and Duke are currently evaluating what issues surrounding the development and use of SMRs they want to tackle first, but both agree that more study is needed. The partners said the process to site, permit, receive regulatory approval, build and bring a new nuclear plant online currently takes about 10 years to complete.... Purdue and Duke said if they do decide to pursue the development of SMRs near campus or elsewhere in Indiana, public and stakeholder input would be an important first part of the process....

Source: https://www.insideindianabusiness.com/articles/study-small-modular-nuclear-could-bring-energy-benefits-for-purdue, 02 June 2023.

NUCLEAR COOPERATION

IRAN–SAUDI ARABIA

Iran-Saudi Nuclear Cooperation Possible

Nour News said Iran's nuclear technology can be transferred to Saudi Arabia in accordance with international laws and under the supervision of the IAEA. "Given the opposition of the Zionists to a nuclear Saudi Arabia, in the new chapter of relations between Tehran and Riyadh, cooperation in the field of peaceful nuclear technologies and transfer of Iran's experiments and achievements to this country in accordance with international laws and under the supervision of the Agency can be one of the main axes of bilateral relations," Nour News said on Twitter...

Given the opposition of the Zionists to a nuclear Saudi Arabia, in the new chapter of relations between Tehran and Riyadh, cooperation in the field of peaceful nuclear technologies and transfer of Iran's experiments and achievements to this country in accordance with international laws and under the supervision of the Agency can be one of the main axes of bilateral relations," Nour News said on Twitter.

Likewise, the Saudi foreign minister expressed satisfaction with the very good progress achieved in bilateral relations with Iran. Bin Farhan (Saudi Foreign Minister) thanked the Iranian side for the valuable assistance in welcoming the Saudi technical delegation in order to lay the groundwork for the opening of the Saudi embassy and consulate in Iran.

Farhan added that with the very good bilateral cooperation, the two sides quickly passed the stages of appointing ambassadors and setting the stage for the opening of political and consular missions, and the two states are moving towards a new stage in their relations, which will serve the interests of the two nations and the entire region. The top Saudi diplomat also said he will visit

Tehran soon.

Source: https://www. tehrantimes.com/news/485474/Iran-Saudi-nuclear-cooperation-possible-report, 07 June 2023.

KYRGYZTAN–RUSSIA

Kyrgyzstan and Rosatom Agree Nuclear Healthcare Cooperation

Russia's Rosatom has signed a fresh memorandum of cooperation (MoC) with Kyrgyzstan, on non-energy application of nuclear technologies in healthcare, and updated the country on "progress of the development of a project for the construction" of a SMR. Talks between Rosatom Director General Alexei Likhachev and the Chairman of the Cabinet of Ministers of the Kyrgyz Republic, Akylbek Zhaparov, took place during the Eurasian Intergovernmental Council.

Russia's Rosatom has signed a fresh memorandum of cooperation (MoC) with Kyrgyzstan, on non-energy application of nuclear technologies in healthcare, and updated the country on "progress of the development of a project for the construction" of a SMR.

According to Rosatom, "the whole range of issues of bilateral cooperation was considered, including the reclamation of uranium tailings, low-power nuclear power plants and nuclear medicine". The MoC covers plans "to jointly develop high-tech medical projects in Kyrgyzstan. In particular, we are talking about the creation of a radiopharmaceutical pharmacy and a molecular imaging centre on the basis of the National Centre for Oncology and Haematology, where advanced methods for diagnosing and treating oncological and other diseases will be applied".

The Kyrgyz government said it "noted the need to continue the work aimed at comprehensively solving problems related to waste storage facilities" and the two sides expressed "satisfaction the progress in the implementation of the priority project of bilateral cooperation"…. Likhachev said: "We are pleased to have the opportunity, together with Kyrgyz partners, to develop innovative technologies that will make a significant contribution to improving the quality of life of people in our countries."

Source: https://www.world-nuclear-news.org/Articles/Kyrgyzstan-and-Rosatom-agree-nuclear-healthcare-co, 09 June 2023.

USA–UK

US-UK Declaration Includes Nuclear Partnership

The Atlantic Declaration for a US-UK Economic Partnership, announced by Prime Minister Sunak and President Biden, says the two nations aim to build resilient, diversified, secure supply chains and reduce strategic dependencies - and includes a new high-level US-UK civil nuclear partnership. "Today we have agreed the Atlantic Declaration, a new economic partnership for a new age, of a kind that has never been agreed before," Sunak said.

The Atlantic Declaration for a US-UK Economic Partnership, announced by Prime Minister Sunak and President Biden, says the two nations aim to build resilient, diversified, secure supply chains and reduce strategic dependencies - and includes a new high-level US-UK civil nuclear partnership.

The declaration and its accompanying action plan are described as a "new type of innovative partnership" across the full spectrum of economic, technological, commercial and trade relations. As well as a new economic security framework, it will support UK and US efforts to "harness the energy transition and technological breakthroughs to drive broadly shared growth, create good jobs, and leave no community behind", the declaration states.

The civil nuclear partnership included in the Atlantic Declaration will be overseen by senior officials in both governments. Near-term priorities for joint action will be set by the US-UK Joint Action Group on Energy Security and Affordability (the JAG), "to encourage the establishment of new infrastructure and end-to-end fuel cycle

capabilities by 2030 in both continents, and substantially minimise reliance on Russian fuel, supplies, and services".

Joint US-UK activity "will support and facilitate the safe, secure, and sustainable international deployment of advanced, peaceful nuclear technologies, including small modular reactors, in accordance with the highest non-proliferation standards and consistent with a 1.5 degree Celsius limit on global warming". A Joint Standing Committee on Nuclear Energy Cooperation will deliver on shared commitments by the end of the year and serve as an "enduring bilateral forum to advance shared policy goals across existing engagement mechanisms," including near-term actions identified through the JAG. It will also facilitate exchanges on new and evolving technical and policy developments regarding nuclear energy, the declaration says.

As well as the civil nuclear partnership, the Atlantic Declaration includes a one-year Joint Clean Energy Supply Chain Action Plan under which JAG is tasked, by the end of this year, to identify and decide on near-term actions to accelerate the buildout of capacity to meet clean energy demands.

As well as the civil nuclear partnership, the Atlantic Declaration includes a one-year Joint Clean Energy Supply Chain Action Plan under which JAG is tasked, by the end of this year, to identify and decide on near-term actions to accelerate the buildout of capacity to meet clean energy demands. This will include public-private consultations across key clean energy supply chains, including offshore wind and electric vehicle batteries, and "rapid stress-test exercises across key clean energy supply chains, which could form a model for future work on supply chain resilience"....

Source: https://www.world-nuclear-news.org/Articles/US-UK-declaration-includes-nuclear-partnership, 09 June 2023.

URANIUM PRODUCTION

KAZAKHSTAN

Kazatomprom Delivers Second Batch of Nuclear Fuel to China

Kazakhstan's nuclear fuel company, Kazatomprom, has delivered to China a second batch of low enriched uranium fuel totalling more than 30 tonnes manufactured by the Ulba-FA Kazakh-Chinese joint venture. Ulba-FA began operation in November 2021, after it was certified by the owner of the AFA 3G fuel assembly production technology, French Framatome, and recognised as a certified nuclear fuel supplier by the end user, China General Nuclear Power's CGNPC-URC. The joint venture was founded by Ulba Metallurgical Plant (a subsidiary of Kazatomprom, which has a 51% stake) and CGNPC-URC, which has a 49% stake.

Kazakhstan's nuclear fuel company, Kazatomprom, has delivered to China a second batch of low enriched uranium fuel totalling more than 30 tonnes manufactured by the Ulba-FA Kazakh-Chinese joint venture. Ulba-FA began operation in November 2021, after it was certified by the owner of the AFA 3G fuel assembly production technology.

An acceptance ceremony of the fuel took place at China's Fangchengang NPP. Ulba FA plans to increase production in 2024 to its rated capacity of 200 tonnes a year. The plant has a guaranteed market for the next 20 years. The Ulba-FA delivered the first batch of fuel assemblies for Chinese NPPs in December 2022. A number of additional shipments are planned this year. "Our countries have many years of experience co-operating in the nuclear industry. Kazatomprom and CGN are strategic partners with a wide range of interactions," said Kazatomprom CEO Yerzhan Mukanov.

"We have implemented a number of successful projects for uranium mining, production of fuel pellets and fuel assemblies. We are proud that Kazakhstan's nuclear fuel will meet the needs of China's nuclear power industry... Thanks to our

cooperation, Kazatomprom is acquiring new experience to become a supplier of an integrated package of services – from the production of natural uranium oxide to the production and sale of the final products of the pre-reactor nuclear fuel cycle in the form of fuel assemblies." Mukanov said.

Dosbolat Sarymsakov, Chief Nuclear Fuel Cycle Officer of Kazatomprom, said he was pleased to note the increasing dynamics of cooperation between the companies in the field of the nuclear fuel cycle. All our achievements are the result of the fruitful work of the Kazakh-Chinese team....

Source: https://www.neimagazine.com/news/newskazatomprom-delivers-second-batch-of-nuclear-fuel-to-china-10911681, 02 June 2023.

NUCLEAR PROLIFERATION

IRAN

Netanyahu Attacks 'Irrelevant' IAEA, Says Nuclear Watchdog Gave in to Iran

Prime Minister Netanyahu accused the IAEA on June 4 of ineffectually policing Iran's nuclear activities and suggested the UN watchdog risked becoming politicized and irrelevant. The unusual criticism followed an IAEA report last week that Iran had provided a satisfactory answer on one case of suspect uranium particles and re-installed some monitoring equipment originally put in place under a now-defunct 2015 nuclear deal.

With Iran having enriched enough uranium to 60% fissile purity for two nuclear bombs, if refined further - something it denies wanting or planning - Israel has redoubled threats to launch preemptive military strikes if international diplomacy fails. "Iran is continuing to lie to the International Atomic Energy Agency. The agency's capitulation to Iranian pressure is a black stain on its record," Netanyahu told his cabinet in televised remarks. "If the IAEA becomes a political organization, then its oversight activity in Iran is without significance, as will be its reports on Iran's nuclear activity." Netanyahu said.

With Iran having enriched enough uranium to 60% fissile purity for two nuclear bombs, if refined further - something it denies wanting or planning - Israel has redoubled threats to launch preemptive military strikes if international diplomacy fails.

The IAEA did not immediately respond to a request for comment. On May 31, it reported that after years of investigation and lack of progress, Iran had given a satisfactory answer to explain one of three sites at which uranium particles had been detected. Those particles could be explained by the presence of a Soviet-operated mine and lab there and the IAEA had no further questions, a senior diplomat in Vienna said.

In an apparent reference to this, Netanyahu said: "Iran's excuses...regarding the finding of nuclear material in prohibited locations are not only unreliable, they are technically impossible." However, the Vienna diplomat also told Reuters the IAEA's assessment remained that Iran carried out explosives testing there decades ago that was relevant to nuclear weapons.

Iran's excuses...regarding the finding of nuclear material in prohibited locations are not only unreliable, they are technically impossible." However, the Vienna diplomat also told Reuters the IAEA's assessment remained that Iran carried out explosives testing there decades ago that was relevant to nuclear weapons.

After then-US President Trump quit the Iran nuclear deal in 2018, Tehran ramped up uranium enrichment. Israeli and Western officials say it could switch from enrichment at 60% fissile purity to 90% - weapons-grade - within a few weeks. In a 2012 UN speech, Netanyahu deemed 90% enrichment by Iran a "red line" that could trigger preemptive strikes. Experts are divided, however, on whether Israel - despite having an advanced military believed to be nuclear-armed - can deal lasting damage to Iran's distant, dispersed and well-defended facilities.

"In the event that we reach decision-point, where the two options are the Iranians breaking out to a bomb or us taking action, we will take action," Israeli Energy Minister Israel Katz, a member of Netanyahu's national security cabinet, said. "We are making all of the preparations at this very moment," Katz told Galey Israel radio.

Source: https://www.jpost.com/middle-east/iran-news/article-745165, 04 June 2023.

NATO

Nato Does not Want to Operate in Indo-Pacific, but it Wants to Engage the Region

The NATO does not wish to operate or expand in the Indo-Pacific, but it wants to be involved and engaged in the region to gain a better understanding of happenings in this part of the world. This was the view of NATO's assistant secretary-general for defence policy and planning Angus Lapsley, who spoke during a special session on Nuclear Dimensions of Regional Security, at the IISS Shangri-La Dialogue in Singapore on June 2.

Threats related to nuclear proliferation do not just concern Asia but the rest of the world as well, he said. "As a Euro-Atlantic alliance, we need to be able to see our security against a wider backdrop, including what's happening here in Asia. And I think the pace of change in the Indo-Pacific region is starting to have a bigger impact," he said. He added that NATO will be holding discussions with Australia, New Zealand, South Korea and Japan.

The senior NATO official also urged Beijing to be more open about its accelerating nuclear weapons build-up, saying that as a global power, China had a responsibility to improve transparency. ... Mr Lapsley also commented on findings by the US that China was continuing to strengthen its strategic nuclear arsenal and could have 1,000 nuclear warheads by 2030. The report by the Pentagon, released last November, estimated that by 2035, China will likely possess a stockpile of 1,500 nuclear warheads and an advanced array of missiles. "That's not just an evolution but a very major change on the global strategic balance," Mr Lapsley remarked. "As a global power, China has global responsibilities," he noted, adding that NATO remained open to engaging meaningfully in dialogue with China.

The senior NATO official also urged Beijing to be more open about its accelerating nuclear weapons build-up, saying that as a global power, China had a responsibility to improve transparency. ... Mr Lapsley also commented on findings by the US that China was continuing to strengthen its strategic nuclear arsenal and could have 1,000 nuclear warheads by 2030.

Developments in Iran and North Korea on the nuclear front were also of concern, the NATO official said. "These are problems we worry about because of the precedents being set and the risk of conflict being triggered," he told the audience. Participants at the session drew attention to different dimensions of the heightened risk posed by nuclear proliferation. South Korea's top nuclear envoy Kim Gunn urged the international community to collectively condemn North Korea's recent attempt to launch a spy satellite that ultimately failed during launch and crashed into the sea.

Pyongyang had gone on to announce an additional launch that violates United Nations Security Council resolutions, said Mr Gunn, who is the Foreign Ministry's special representative for Korean peninsula peace and security affairs. "The prospect of the threat is bleak," he said. "Many years ago, it was believed that nuclear weapons would fade away, but the world is still living in its shadows," he told the audience.

Source: https://www.straitstimes.com/singapore/nato-does-not-want-to-operate-in-indo-pacific-but-it-wants-to-engage-the-region-official, 03 June 2023.

USA–UK–AUSTRALIA

China Urges U.S., UK, Australia to Stop Acts of Nuclear Proliferation

China called on the United States, Britain and Australia to heed the concerns of the international

community and stop acts of nuclear proliferation such as their nuclear submarine cooperation, Foreign Ministry Spokesperson Wang Wenbin said here June 6.

...Wang told a daily news briefing that Prime Minister Sen's remarks speak to the concerns widely shared by regional countries, including the ASEAN nations. The AUKUS security partnership and related nuclear submarine cooperation creates nuclear proliferation risks, threatens the international nuclear non-proliferation system, undermines the South Pacific Nuclear Free Zone Treaty, and undercuts ASEAN countries' efforts to establish a Southeast Asia nuclear weapon-free zone, Wang said.

China called on the United States, Britain and Australia to heed the concerns of the international community and stop acts of nuclear proliferation such as their nuclear submarine cooperation, Foreign Ministry Spokesperson Wang Wenbin said here June 6.

According to estimates by international arms control experts, the weapons-grade nuclear materials the United States and Britain plan to transfer to Australia would be sufficient to build as many as 64 to 80 nuclear weapons, Wang said. Wang added that if the three countries are set on advancing their nuclear submarine cooperation, it is bound to deal an irreversible heavy blow to the integrity, efficacy and authority of the international nuclear non-proliferation system and trigger similar behavior in other non-nuclear-weapon states, thus turning the region into an arena of arms race. "Such practice of seeking one's own security at the expense of other countries' security and plunging other countries into 'security anxiety' is extremely irresponsible and dangerous," Wang said.

Wang said as ASEAN's comprehensive strategic partner and friendly neighbor, China firmly supports ASEAN nations' efforts to establish the Southeast Asia nuclear weapon-free zone. Wang added that China is the first nuclear-weapon state to openly support the Treaty on the Southeast Asia NWFZ and have expressed readiness to sign the Protocol to the Treaty. ...

Source: https://english.cctv.com/2023/06/07/ARTI9XW1tERVESxCh7EGkFJh230607.shtml, 07 June 2023.

The small-scale alliance relevant to nuclear-powered submarines among the U.S., Britain and Australia is becoming a concern for ASEAN and countries in the region because ASEAN is a nuclear weapon-free zone, and we oppose nuclear weapon proliferation," Sen said.

Cambodian PM Says AUKUS becoming Concern for ASEAN over Nuclear Proliferation

Cambodian Prime Minister Samdech Techo Hun Sen said on June 5 that the tripartite AUKUS alliance, a military pact among the United States, Britain and Australia, is becoming a concern for the ASEAN. Under the AUKUS alliance, which was announced in September 2021, Australia will be able to build nuclear-powered submarines with technology provided by the United States and Britain.

"The small-scale alliance relevant to nuclear-powered submarines among the U.S., Britain and Australia is becoming a concern for ASEAN and countries in the region because ASEAN is a nuclear weapon-free zone, and we oppose nuclear weapon proliferation," Sen said in a speech during the graduation ceremony of nearly 6,000 students at the Royal University of Law and Economics. Hun Sen said this military alliance is the "starting point of a very dangerous arms race" in the region. "I think if this situation continues, the world will face a bigger danger," Sen said.

Joseph Matthews, a senior professor at the BELTEI International University in Phnom Penh, said AUKUS is posing a major security threat to ASEAN and the whole Asian region. "This alliance will trigger a conventional and nuclear arms race in the region, and thus destabilize the peace and security, undermine the economic development

and destroy the ASEAN's centrality," Matthews told Xinhua....

Source: https://english.news.cn/20230605/c3d5237d066e4132941ac 94f08e63b1f/c.html, 05 June 2023.

NUCLEAR NON-PROLIFERATION

VIETNAM

Ambassador Reaffirms Vietnam's Support for Nuclear Non-proliferation

Ambassador Nguyen Trung Kien, Governor - Permanent Representative of Vietnam to the IAEA, has affirmed Vietnam's consistent policy of supporting the non-proliferation of the nuclear weapons. Speaking at the regular meeting of the IAEA Board of Governors that opened in Vienna on June 5, Ambassador Kien highlighted the need to balance the three pillars of the NPT, thereby elevating the rights of countries to use nuclear energy and technology for peaceful purposes in accordance with international law and NPT obligations.

Speaking at the regular meeting of the IAEA Board of Governors that opened in Vienna on June 5, Ambassador Kien highlighted the need to balance the three pillars of the NPT, thereby elevating the rights of countries to use nuclear energy and technology for peaceful purposes in accordance with international law and NPT obligations.

Underlining Vietnam's efforts and achievements in nuclear safeguards, he affirmed that the country always supports IAEA's role and values technical cooperation programmes, particularly ongoing ones between Vietnam and the IAEA such as the ZODIAC programme and the trilateral project among Vietnam, Laos/Cambodia, and the IAEA. He also suggested the IAEA continue enhancing support for and technical cooperation with Vietnam in this field. The meeting will take place over the course of one week and focus on reviewing and discussing IAEA's annual, technical cooperation and nuclear safeguard reports, with the aim of reaching consensus on and submitting them to the 67th IAEA General Conference in September.

Other topics of interest will also be tabled for discussions, such as the implementation of nuclear safeguards agreements between IAEA and Iran, the Democratic People's Republic of Korea, and Syria, and emerging security and safety issues at nuclear power plants in Ukraine, and the trilateral security pact between the US, UK and Australia on the hand-over of nuclear-powered submarines (AUKUS).

Other topics of interest will also be tabled for discussions, such as the implementation of nuclear safeguards agreements between IAEA and Iran, the Democratic People's Republic of Korea, and Syria, and emerging security and safety issues at nuclear power plants in Ukraine, and the trilateral security pact between the US, UK and Australia on the hand-over of nuclear-powered submarines (AUKUS)....

Source: https://vietnamnet.vn/en/ambassador-reaffirms-vietnam-s-support-for-nuclear-non-proliferation-2151526.html, 06 June 2023.

NUCLEAR SAFETY

UKRAINE

Grossi to Lead IAEA Mission to Zaporizhzhia Next Week

IAEA Director General Grossi is to lead the latest rotation of its experts at the Zaporizhzhia nuclear power plant next week. It comes as the IAEA and nuclear experts in Ukraine and in Russia say there is no short-term risk to its safety and security as a result of the damaged Nova Kakhovka dam.

The dam was damaged early on June 6, prompting widespread flooding and evacuations. The Zaporizhzhia nuclear power plant - Ukraine and Europe's largest - is about 140 kilometres upstream from the dam so not in an area directly affected by flooding. But the damage has led to a fall in the level of the reservoir, which is used to supply cooling water to the plant....

...The fall in the reservoir levels is a scenario which has been planned for, including in stress tests carried out after the Fukushima earthquake and tsunami and also by Ukraine's nuclear operator Energoatom, at the request of the State Nuclear Regulatory Inspectorate of Ukraine (SNRIU), over the past winter.

According to the head of SNRIU, Oleg Korikov, the measures outlined meant that the reservoir's lower water level "should not affect the state of nuclear and radiation safety of the Zaporizhzhya NPP, provided that these measures are implemented" and with the reactors remaining in their current shutdown state, which means a lot less cooling water is required.

Grossi added: "There is a preparedness for events like this...which will help staff to handle this new challenging situation. But, clearly, this is making an already very difficult and unpredictable nuclear safety and security situation even more so.

In its update the IAEA said that, even when water levels are too low for the usual pumping system to operate, "the existing water in the ZNPP site's sprinkler and cooling ponds as well as the adjacent channels can still be used for some time to cool the reactors and the spent fuel pools in the reactor buildings ... In addition, a large cooling pond next to the site - the main alternative source of water in the absence of the reservoir - is currently full and has enough in storage to supply the plant for several months as its six reactors are in shutdown mode"....

There is 'no immediate nuclear safety risk' at the Zaporizhzhia nuclear power plant, according to the IAEA. Karine Herviou, the deputy head of France's IRSN nuclear safety regulator, also told AFP there was "no immediate risk to the safety of the plant".

Grossi added: "There is a preparedness for events like this...which will help staff to handle this new challenging situation. But, clearly, this is making an already very difficult and unpredictable nuclear safety and security situation even more so." Russia's Tass news agency reported a spokesman for the Nuclear Safety Institute of the Russian Academy of Sciences as saying "the water level in the reservoir supplying cooling water to the reactors is at a sufficient level and is being monitored. We are keeping a close eye on the situation...the plant's employees are in control of the situation."

Meanwhile Renat Karchaa, adviser to the CEO of Russia's Rosenergoatom, told Tass that the number of IAEA inspectors at the Zaporizhzhia nuclear power plant "will increase several times", confirming Grossi's comments to reporters earlier this week (before the dam was breached) that he wanted to "reinforce" and increase the size of the team, to reflect their wider reporting responsibilities in monitoring the five safety principles outlined at the UN last week.

Grossi had said he was not sure when the enlargement of the team would take place and that it might be at the next rotation - which he has said he will lead, and which will take place next week. President Zelensky said he discussed the situation at the plant with the IAEA director general, and agreed with Grossi on visiting Ukraine in the coming days....

Source: https://www.world-nuclear-news.org/Articles/Grossi-to-lead-IAEA-mission-to-Zaporizhzhia-next-w, 07 June 2023.

Ukraine Nuke Plant Safety at Stake after Dam Damage

Moscow and Kyiv have blamed each other for the damage at the Kakhovka hydroelectric dam, which has led to thousands of people being evacuated because of flooding. The Kakhovka dam sits on the Dnipro river, which feeds a reservoir providing cooling water for the Russian-occupied Zaporizhzhia nuclear power station, some 150 kilometres (90 miles) away. The IAEA — which has a team of experts at the plant — said it was "closely monitoring the situation" at the plant but saw "no immediate nuclear safety risk".

There is 'no immediate nuclear safety risk' at the Zaporizhzhia nuclear power plant, according to the

IAEA. Karine Herviou, the deputy head of France's IRSN nuclear safety regulator, also told AFP there was "no immediate risk to the safety of the plant". "There is no risk of flooding of the plant since the dam is downstream, not upstream," Karine said. The plant's Russian-installed director, Yuri Chernichuk, insisted there was no security threat to the plant....

Ukraine's Zaporizhzhya Nuclear Power Plant (ZNPP) has been without external back-up power for three months now, leaving it extremely vulnerable in case the sole functioning main power line goes down again and underlining the importance of adhering to five principles established by the IAEA for the protection of the facility during the military conflict, Director General Grossi said on June 2.

Damage to the dam was leading to a reduction in the height of the reservoir of about five centimetres (two inches) per hour, IAEA head Rafael Grossi said in a statement to his agency's 35-member board of governors. Water in the reservoir was at around 16.4 metres early on June 6, and if it drops below 12.7 metres, then it can no longer be pumped to the plant, Grossi warned, adding this could happen in "a few days"....

... The ZNPP continues to rely on the only remaining operational 750 kV power line for the external electricity it needs for reactor cooling and other essential nuclear safety and security functions. Before the conflict, the plant had four such off-site power lines available. A back-up 330 kV power line that was damaged on 1 March on the other side of the Dnipro River as seen from the Russian-controlled ZNPP has still not been repaired.

One option could be to bring truck water to the site "even if this is not necessarily easy in times of war". The plant's reactors have already been shut down, but they still need cooling water to ensure there is no nuclear disaster. "Absence of cooling water in the essential cooling water systems for an extended period of time would cause fuel melt and inoperability of the emergency diesel generators," Grossi warned.... Grossi has repeatedly called for the protection of the plant as shelling has taken place near it and also several times disrupted its crucial power supply.

Source: https://www.france24.com/en/live-news/20230606-ukraine-nuke-plant-safety-at-stake-after-dam-damage, 06 June 2023.

IAEA Director General Statement on Situation in Ukraine

Ukraine's Zaporizhzhya Nuclear Power Plant (ZNPP) has been without external back-up power for three months now, leaving it extremely vulnerable in case the sole functioning main power line goes down again and underlining the importance of adhering to five principles established by the IAEA for the protection of the facility during the military conflict, Director General Grossi said on June 2.

One of the five concrete principles that the Director General presented to the United Nations Security Council on 30 May – aimed at preventing a nuclear accident – states that off-site power to the ZNPP "should not be put at risk" and that "all efforts should be made to ensure that off-site power remains available and secure at all times".

The other principles outlined in 30th May meeting at the Security Council included commitments not to attack from or against the plant, not using it as storage or a base for heavy weapons, and to protect structures, systems and components essential to its safe and secure operation from attacks or acts of sabotage. "While the principles won broad support at the United Nations Security Council, which is very encouraging and an important step forward for ensuring nuclear safety and security at the Zaporizhzhya Nuclear Power Plant, the general situation at the site remains highly precarious and potentially dangerous," Grossi said.

... The ZNPP continues to rely on the only remaining

operational 750 kV power line for the external electricity it needs for reactor cooling and other essential nuclear safety and security functions. Before the conflict, the plant had four such off-site power lines available. A back-up 330 kV power line that was damaged on 1 March on the other side of the Dnipro River as seen from the Russian-controlled ZNPP has still not been repaired, with Ukraine having said that military action has prevented its experts from safely accessing the location situated in territory it controls to repair the line.

The lack of any back-up options means that when the 750 kV line is cut – as happened most recently on 22 May – Europe's largest NPP is forced to rely on emergency diesel generators as a last line of defence, clearly an unsustainable situation. The IAEA experts at the site recently visited the ZNPP 750 kV open switchyard, where they confirmed that three of the power lines remained disconnected and learned that some parts for repairing them were being manufactured but the delivery date is not known.

The nearby Zaporizhzhya Thermal Power Plant (ZTPP) operates the 330 kV open switchyard, through which back-up power in the past has been provided to the ZNPP. The Russian Federation reported in March that Rosatom was working to remove damaged equipment from the open switchyard, with the aim of restoring three 330 kV lines to the grid system in currently Russian-controlled territory.

The IAEA team of experts present at the ZNPP has still not been granted access to the ZTPP to assess the situation, despite assurances from Rosatom that they would be able to go there. Consultations are ongoing to secure the access. "Our experts must access the ZTPP to see for themselves what the current situation is like and whether it might be possible to restore back-up power there," Grossi said.

The IAEA team of experts present at the ZNPP has still not been granted access to the ZTPP to assess the situation, despite assurances from Rosatom that they would be able to go there. Consultations are ongoing to secure the access. "Our experts must access the ZTPP to see for themselves what the current situation is like and whether it might be possible to restore back-up power there," Grossi said.

Over the past week, the IAEA team reported hearing two landmine explosions just outside the ZNPP site, again highlighting the tense situation amid intense speculation of imminent military action in the region and the need to observe the Agency's five principles. "As I told the United Nations Security Council just a few days ago, I respectfully and solemnly ask both sides to observe these five principles, which are essential to avoid the danger of a catastrophic incident. These principles are to no one's detriment and to everyone's benefit," Grossi said.

"At Tuesday's meeting, both sides expressed strong support for our work to ensure nuclear safety and security. Everyone agrees that a nuclear accident must not happen. Based on their statements, I expect that these five basic principles will be adhered to," he said. "If there are any violations, which I sincerely hope there won't be, I will not hesitate to report about them publicly." Grossi said.

Grossi expressed concern about the disconnection on 17 May of the automatic data transfer from eight radiation monitoring stations located near the ZNPP to Ukrainian authorities and said the IAEA is addressing this issue with plant management and relevant officials. Ukraine has been providing the data to the IAEA International Radiation Monitoring Information System (IRMIS), which gathers near real-time radiation monitoring data from over 6000 stations worldwide that are part of nationally operated networks. "I hope that we can re-establish a reliable connection to continue to monitor radiation levels soon. It is vital for nuclear safety and security," Grossi said. "In case of a nuclear or radiological emergency anywhere in the world, IRMIS supports the assessment of the radiological situation and provides critical data to immediately inform emergency response decision makers." Grossi said.

In the absence of the automatic connection, the daily radiation monitoring data from the eight stations are provided to the IAEA team at the ZNPP and, subsequently, made available on IRMIS. The IAEA experts at the site also reported on their recent visits to the main control rooms of the ZNPP's six reactors. While the plant has been negatively affected by a considerable reduction in staffing levels during the conflict – limiting maintenance and other vital work – there is still enough operating personnel in the control rooms, the IAEA team reported.

The IAEA experts at the site also reported on their recent visits to the main control rooms of the ZNPP's six reactors. While the plant has been negatively affected by a considerable reduction in staffing levels during the conflict – limiting maintenance and other vital work – there is still enough operating personnel in the control rooms, the IAEA team reported.

The planned rotation of the current team of IAEA experts at the site – the eighth since the mission was established last September – has been delayed because of local weather conditions. Grossi also said he expected to visit the ZNPP soon himself, which would be the third time during the conflict. "With the establishment of the five principles – and my intention to report about any violations – it is important that I travel to the plant again to assess developments there since my last visit in late March," Grossi said.

Elsewhere in Ukraine, the team of IAEA experts at the South Ukraine NPP (SUNPP) reported that a reactor unit that experienced an emergency shutdown on 22 May has returned to full power. IAEA teams present at Ukraine's other NPPs said spent fuel transports to the centralized spent fuel storage at the Chornobyl site are being resumed after more than a year.

Elsewhere in Ukraine, the team of IAEA experts at the South Ukraine NPP (SUNPP) reported that a reactor unit that experienced an emergency shutdown on 22 May has returned to full power. IAEA teams present at Ukraine's other NPPs said spent fuel transports to the centralized spent fuel storage at the Chornobyl site are being resumed after more than a year.

In the last week, new teams of IAEA experts arrived at the SUNPP, Chornobyl, Rivne NPP and Khmelnitsky NPP sites in Ukraine. The IAEA established a permanent presence at these four sites in January, as part of its expanding activities to support nuclear safety and security in Ukraine during the conflict.

In April, Grossi informed President Zelensky that the IAEA is putting in place a comprehensive programme of health care assistance, including psychological support, for all Ukrainian nuclear workers. Today, Grossi announced that IAEA experts are on their way to several Ukrainian NPPs to deliver essential medical equipment and support. ...

In recent days, the IAEA arranged two more deliveries of equipment to Ukraine. Satellite communication systems, antennas and spectrometers were delivered to the national regulator, SNRIU, and the SUNPP. The deliveries were made possible thanks to contributions from the United Kingdom and the United States of America. With 18 deliveries since the start of the conflict, the IAEA has facilitated an international assistance package totalling €5 million to Ukraine in support of nuclear safety and security. Separately, Ukraine informed the IAEA that an UAV had been detected on 29 May near the Khmelnitsky NPP, saying it constituted "a threat to nuclear safety" from the air.

Source: https://www.iaea.org/newscenter/pressreleases/update-160-iaea-director-general-statement-on-situation-in-ukraine, 02 June 2023.

Situation at ZNPP is Deteriorating Every Day " State Nuclear Regulatory Inspectorate

The difficult situation at the ZNPP site is getting worse every day as the Russians continue to cause direct damage to the nuclear safety and security of the plant. ...Korikov (Ukraine's Acting Chairman of the State Nuclear Regulatory Inspectorate and

Chief State Inspector for Nuclear and Radiation Safety) stressed that the Russian invaders continue to put pressure on the personnel of ZNPP, resort to intimidation, conduct searches of station employees' homes, prohibit contact with persons on the territory controlled by the Ukrainian government, and do not allow people to leave the temporarily occupied territory.

The difficult situation at the ZNPP site is getting worse every day as the Russians continue to cause direct damage to the nuclear safety and security of the plant. ...Korikov (Ukraine's Acting Chairman of the State Nuclear Regulatory Inspectorate and Chief State Inspector for Nuclear and Radiation Safety) stressed that the Russian invaders continue to put pressure on the personnel of ZNPP.

He also added that the Russians brought personnel who did not have the appropriate qualifications to the ZNPP. The Russians also dismantled or stole essential elements of nuclear power plant systems and disabled some computer equipment. All this caused damage to the emergency preparedness and response system at ZNPP. In addition, the occupation "administration" blocked the transmission of information from the Automated Radiation Monitoring System of Zaporizhzhia NPP, which threatened safety at the plant. Korikov stressed that restoring nuclear safety and security systems at ZNPP is possible only if the plant is completely liberated and demilitarised.

Source: https://news.yahoo.com/situation-znpp-deteriorating-every-day-091209483.html, 02 June 2023.

NUCLEAR WASTE MANAGEMENT

NETHERLANDS

Dutch Regulator Approves Multi-Functional Storage Facility

The Authority for Nuclear Safety and Radiation Protection (ANVS) has granted the final permit to the Central Organisation for Radioactive Waste (Covra) for the construction of a new multi-functional storage building for low and intermediate-level waste at its site in Nieuwdorp, in the municipality of Borssele, the Netherlands.

In August last year, Covra applied to ANVS for a permit change under the Nuclear Energy Act to construct the Multifunctional Storage Building (MOG). Among the documents submitted by Covra along with the permit application were an environmental impact assessment (EIA) and a supplement to its safety report.

ANVS said its EIA Committee has issued a recommendation on this report and the information on accident scenarios has been supplemented in response to this advice....Covra announced plans for the MOG facility in March 2021. It says the new storage building is mainly intended for the storage of historical radioactive waste that is currently stored on the site of medical isotope producer NRG in Petten. Future decommissioning waste from nuclear installations in the Netherlands will also be placed in the MOG. The current processing and storage at Covra is not yet suitable for this. The new building - designed for the storage of drums of radioactive waste in special stackable storage containers - will provide sufficient storage capacity until 2050.

Future decommissioning waste from nuclear installations in the Netherlands will also be placed in the MOG. The current processing and storage at Covra is not yet suitable for this. The new building - designed for the storage of drums of radioactive waste in special stackable storage containers - will provide sufficient storage capacity until 2050.

The 2400-square-metre MOG will have a repacking area where drums with radioactive waste are packed from the transport container into the storage container. These stackable storage containers will also be used for final storage. Covra said the building will also be made suitable

for waste that it currently receives and which could possibly be processed and packaged in a different way in the future with a view to disposal. MOG - designed for a lifespan of at least 100 years - will be able to accommodate 4000 cubic metres of radioactive waste. The building has been designed in such a way that the storage capacity can easily be expanded later.

Source: https://www.world-nuclear-news.org/Articles/Dutch-regulator-approves-multi-functional-storage, 02 June 2023.

Centre for Air Power Studies

The Centre for Air Power Studies (CAPS) is an independent, non-profit think tank that undertakes and promotes policy-related research, study and discussion on defence and military issues, trends and developments in air power and space for civil and military purposes, as also related issues of national security. The Centre is headed by Air Marshal Anil Chopra, PVSM AVSM VM VSM (Retd).

Centre for Air Power Studies
P-284
Arjan Path, Subroto Park,
New Delhi - 110010
Tel.: +91 - 11 - 25699131/32
Fax: +91 - 11 - 25682533
Email: capsnetdroff@gmail.com
Website: www.capsindia.org

Edited by: Director General, CAPS

Editorial Team: Dr Sitakanta Mishra, Jay Desai, Dr. Ngangom Dhruba Tara Singh, Rishika Singh, Anubhav Shankar Goswami

Composed by: CAPS