



OPINION – Manpreet Sethi

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Understanding Japan’s Nuclear Dilemma

On December 2, 2022, Japan’s Prime Minister Fumio Kishida announced a 15-member International Group of Eminent Persons from nuclear and non-nuclear states to initiate discussions on steps towards universal nuclear disarmament. The first meeting of the group was held on December 10-11, 2022, in Hiroshima, his hometown. The choice of the venue turned out to be both emotional and educational. Visiting ground zero, hearing from the hibakushas (survivors of the atomic bombing) on what they were doing on the morning of August 6, 1945, and engaging with the Japanese youth and civil society, who appealed to the members to show courage in identifying bold steps for the elimination of nuclear weapons, added a sombre dimension to the deliberations. Clearly, the challenges to moving towards a nuclear weapons-free world in the current circumstances are humongous, as acknowledged by PM Kishida himself.

In fact, this is his second such effort. In 2017, too, as foreign minister, he instituted a similar group. Meanwhile, nearly a decade earlier, in 2008, Japan teamed up with Australia to form the International Commission on Nuclear Non-proliferation and Disarmament. However, the lack of progress on disarmament by the nuclear weapon states (NWS) recognised

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by the NPT has resulted in a situation where strained geopolitical relations have made nuclear buildup, not disarmament, the order of the day. Therefore, a fresh call by the Japanese PM to yet again explore steps towards the eventual elimination of nuclear weapons reflects his

leadership on an issue close to his heart and to a majority of the Japanese public.

Interestingly, this initiative also comes at a time when Japan is facing a rather rough security environment. In fact, on December 16, 2022, Tokyo announced a new National Security Strategy (NSS), National Defence Strategy (NDS), and Defence Build-up Program (DBP), taking into account Japan’s current

security concerns. The first of these, expectedly, arises from China's military advances and its frequent incursions into Japanese waters and around the islands disputed between the two. The latest NSS describes China as an unprecedented 'strategic challenge' rather than just an 'issue of concern,' as had been done in the 2013 NSS.

A second threat comes from North Korea's advancing nuclear and missile capabilities. North Korea tested more than 90 missiles in 2022, some of which flew over Japanese territory. Pyongyang's continued nuclear and missile buildup and the lack of progress on the part of the USA, South Korea, and Japan to handle the challenge cause worries in Japan. The third threat has arisen from the Russian operation against Ukraine, which has awakened Tokyo to the possibility of military action by an NWS against another non-nuclear nation. While Japan relies on the US nuclear umbrella to avert such a possibility, the incident has underscored the need for a sufficient national military capability to handle regional contingencies, especially if Washington was distracted by other priorities, as it presently is with Europe

In the wake of these palpable security threats, it is not surprising that Japan's NDS 2022 has acknowledged that "Japan must: fundamentally reinforce defense capability with a focus on opponents' capabilities and the ways they prosecute warfare~ and actively adapt to new ways of warfare." Accordingly, the DBP has decided to hike defence spending from 1 per cent to 2 per cent of Japan's GDP by 2027, making it Japan's largest military spending since World War II. Secondly, Japan has also outlined plans to acquire 'counterstrike capability' through long-

range land and sea-launched missiles. In the past, Tokyo preferred relying on missile defence. But now, it appears ready to accept counterstrike as a way to thwart enemy attacks rather than just defending itself. Finally, of course, the NDS

clarifies that "counterstrike capabilities fall within the purview of Japan's Constitution and international law~ they do not change Japan's exclusively defense-oriented policy." None of the three documents mentions nuclear weapons. Japan continues to maintain

the centrality of the 'Three Non-Nuclear principles,' adopted by the National Diet in 1971. These include a commitment to "not possess, not produce, and not permit the introduction of nuclear weapons." However, discussion on nuclear sharing a la NATO has surfaced amongst the Japanese strategic community of scholars and retired practitioners. Soon after the Russian military action against Ukraine, the former PM of Japan, late

Shinzo Abe, also from the same political party as the current PM, had hinted at a reappraisal of security strategies by the NNWS, including Japan. He had called upon Tokyo to cast off taboos around its possession of nuclear weapons and consider hosting them as NATO members do in Europe.

For now, though, Japan does not seem to be ready to accept this advice. Rather, it appears to be basing its defence strategy on three planks. One, it is significantly enhancing its conventional forces. Secondly, it is seeking reinforcement of the US commitment to keep nuclear weapons as a core component of their alliance. So, Japan is supportive of the US first-use strategy and its deployment of low-yield nuclear weapons to deter regional contingencies. Thirdly, Japan is looking for universal nuclear

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disarmament to strip its adversaries of their nuclear weapons and thus ease its security concerns in the long term. Is there a dichotomy amongst these three efforts? Are the first two in conflict with the last one? Not necessarily, when seen through the lens of Japan's increasingly hostile threat environment. This is forcing Tokyo to balance a pacifist constitution and a desire for eventual nuclear disarmament with the compulsion of military enhancements, including through US affirmations of an "unwavering commitment to the defense of Japan, including...by the full range of conventional and nuclear capabilities."

It may be recalled that India, too, faced a somewhat similar dilemma in the 1980s and 1990s when it was faced with threats from two nuclear-armed nations, China and Pakistan. Without the protection of a nuclear umbrella of any NWS, India too had then campaigned for prioritising nuclear disarmament. PM Rajiv Gandhi presented an action plan to the third special session on disarmament in 1988. However, Cold War politics killed the initiative. Thereafter, the unconditional and indefinite extension of the NPT in 1995 made India realise that the non-nuclear weapon states (NNWS) had lost any leverage on the NWS to push them towards giving up their nuclear weapons. The belief was strengthened when the CTBT, in 1996, accepted the rights of the NWS to undertake nonexplosive nuclear tests to hone their nuclear arsenals while binding others to a ban on nuclear testing. All these developments shattered New Delhi's hopes for universal nuclear disarmament. Acquisition of nuclear weapons became a necessity to safeguard against the threat of nuclear blackmail and coercion from nuclear-armed neighbours who lay claim to Indian territories. But, even as a nuclear possessor, India has continued to campaign for a NWFZ. There is no contradiction in this position. Nuclear weapons remain a short-term compulsion owing to immediate security threats, but an NWFZ is a long-term aspiration to remove nuclear risks

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Today, Japan, too, is looking for its security by fortifying all possible routes: conventional modernisation, strengthening alliances (with the US and others, such as the Quad), and searching for universal nuclear disarmament. Each one of them is being built as a bulwark to keep the country from having to amend its policy of nuclear 'no'. Indeed, crossing that bridge will not be easy, given that 75 per cent of the Japanese public supports nuclear disarmament. It is, therefore, not surprising that PM Kishida has chosen to give disarmament another chance in the face of the deteriorating regional and global nuclear threat environment. As he has said, "giving up is not an option".

Source: <https://capsindia.org/understanding-japans-nuclear-dilemma/>, 18 January 2023.

OPINION – Gabriel Honrada

Towards a Nuclear-Armed South Korea

South Korea may be inching closer to acquiring its own nuclear weapons, driven by wavering confidence in US security guarantees and North Korea's rapidly advancing nuclear program. ... South Korean President Yoon Suk-yeol announced that his country might consider building tactical nuclear weapons in response to North Korea's nuclear weapons program, the first time that a South Korean President raised the possibility since 1991. "It's possible that the problem gets worse, and our country will introduce tactical nuclear weapons or build them on our own. If that's the case, we can have our own nuclear weapons pretty quickly, given our scientific and technological capabilities," said Yoon according to reports.

President Yoon also mentioned that North Korea's nuclear weapons pose a threat to the US and other allies, saying, "The North Korean nuclear threat is not only a threat to South Korea anymore, or an issue of the United States merely protecting South

Korea. It has become a so-called common interest for South Korea, Japan, and the United States," he said. In addition ... Yoon mentioned the possibility of basing US tactical nuclear weapons in South Korea, noting that "It's always important to choose a realistically possible means," he said. The Warzone notes that basing US nuclear weapons in South Korea has been a hot topic since President Yoon came to power last May, emphasizing that his immediate concern is strengthening South Korea's alliance with the US and bolstering its military capabilities.

In line with President Yoon's statements, South Korean attitudes increasingly favor going nuclear. A February 2022 study by the Carnegie Endowment for Regional Peace shows that 71% of the South Korean public favor having their own nuclear weapons, with 56% supporting the US deploying nuclear weapons in their territory. Asked whether South Korea should have its own independent nuclear arsenal, the study shows that 67% prefer it, with only 9% supporting deployment of US nukes. In terms of opposing nuclear weapons, the study shows that 40% oppose US nuclear weapons deployment, while only 26% oppose having an independent nuclear arsenal. Furthermore, the study shows that North Korea remains the primary driver for pro-nuclear South Korean sentiment, with 82% believing Pyongyang won't give up its nuclear weapons, noting that these respondents were the most likely to support a South Korean independent nuclear arsenal. Apart from North Korea, the study notes that 55% of respondents believe China will be South Korea's primary security challenge in the next decade. The study also shows that prestige is a driving factor

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for favorable South Korean public opinion toward having nuclear weapons, with 26% mentioning South Korea's increasing international prestige driving their support.

Another driver for the South Korean public's favorable views on nuclear weapons may be the

US operational command of the latter's military. In an August 2019 article for the Carnegie Endowment for Regional Peace, Kathryn Botto notes that since the 1950s, the US has been designated operational command (OPCOM) of South Korea's military in the event of hostilities. Moreover, she notes that South Korea's situation is an anomaly as other US allies such as Japan and even weaker US partners such as Iraq and the Philippines maintain OPCOM of their militaries. This arrangement may hinder South Korea from acting independently to defend itself against North Korea. In a June 2022 policy paper for Stimson, Clint Work notes that while the US has been encouraging South Korea to take a more active role in the alliance command structure, US officials have been reluctant to relinquish control too quickly. Work also mentions that South Korea has been unwilling to assume OPCOM since doing so may undermine the rationale for maintaining US presence and commitment.

In addition to that push-and-pull dynamic, there are doubts over the US's willingness to use nuclear weapons to defend South Korea in a conflict situation. In an October 2022 article for *The Diplomat*, Seong-Chang Cheong notes that US and South Korean experts have doubts about whether the US would go for nuclear retaliation should North Korea attack the South with tactical nuclear weapons. Cheong also notes that even if

Washington and Seoul agree on nuclear sharing or stationing US nuclear weapons on the latter's territory, the US President will still have the final say on launching a nuclear strike.

Asia Times has previously reported on North Korea's determined effort to break

the logic of extended deterrence by directly threatening nuclear strikes on the US mainland, which makes it even more unlikely that the US would launch a nuclear retaliation on North Korea on behalf of South Korea. South Korea's acquisition of an independent nuclear arsenal resolves many of these issues, though it will require some backtracking. South Korea signed the 1968 NPT in 1975. South Korea also has a 1991 Joint Declaration with North Korea wherein both sides agreed not to "test, manufacture, produce, receive, possess, store, deploy or use nuclear weapons." Obviously, North Korea has blatantly violated that agreement with six nuclear tests since 2006 while the so-called Six-Party Talks on its nuclear weapons program have terminally stalled. As South Korea is officially prohibited from having nuclear weapons, it has been developing conventional deterrents.

In April 2022, *Naval News* reported South Korea's successful SLBM test from the submarine ROKS Dosan Ahn Changho. It involved two SLBMs based on the Hyunmoo-2B land-based ballistic missiles that traveled up to 400

kilometers before hitting a pre-designated area. However, an SLBM may be too expensive to be used with anything less than a nuclear warhead. *Asia Times* has reported on South Korea's plans to have nuclear ballistic missile submarines (SSBN), driven partly by North Korea's efforts to build its undersea nuclear arsenal. However, it

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faces significant practical, logistical and technical challenges. As with SLBMs, SSBNs may be too costly to operate packing anything less than a nuclear punch. All these advances point to South Korea's aim to achieve nuclear latency, wherein it maintains the necessary technology to build a nuclear weapon

quickly.

Source: <https://asiatimes.com/2023/01/towards-a-nuclear-armed-south-korea/>, 14 January 2023.

OPINION – Syed Ali

Modular Nuclear Reactors: For Strengthening India's Energy Security

India is working to phase out its thermal power plants and replace them with nuclear-powered reactors to accelerate its green transition. SMRs will be the go-to technology for this. With the growing economic upward mobility parallel to increasing industrialisation and higher consumption levels, energy is needed to supply the growing demand for a host of basic products.

Coal forms the major share of the energy mix in most Developing countries although gradually shifting towards sustainable & renewable energy sources. The primary and conventional sources of renewable energy; hydro, wind, and solar are being used to harness energy. However, the technology to generate renewable energy

comes at a very high cost and often due to the lack of technical know-how is unattainable in many developing or least developed countries this has been exacerbated further post-pandemic with disrupted supply chains. Therefore, climate finance and the contributions assured by developed countries need to be met and

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accelerated to wean off fossilised sources and progress rapidly towards sustainable sources of energy.

India's existing energy mix comprises 57.9 percent fossil fuels, 42 percent from non-fossil fuel sources, and 1.7 percent from nuclear energy. Modern modular nuclear reactors can increase the share of nuclear energy; a sustainable, non-emitting, and cost-efficient source of energy generation. New innovations in technology have changed the way soviet-era nuclear reactors work. Outdated wisdom has given an untouchable status to nuclear reactors which could be attributed to the mishaps in Fukushima, Chernobyl, and a recent leak in Germany. However, modernised miniature reactors do not generate harmful radioactive waste and are safe to support growing energy demands. International politics around nuclear technology after Hiroshima and Nagasaki has been mired in conflict with international agencies and proliferation treaties keeping the nuclear industry heavily regulated and stifled. The legitimate fear that nuclear technology can be used for nefarious purposes needs to be tackled by upskilling the security apparatus to pre-empt threats to deal with a situation.

Realistically, we are racing against time, therefore aggressive steps need to be incorporated without discriminatory measures affecting the development of emerging economies with feeble energy security. Nuclear energy generated 10 percent of the world's electricity in 2020, a significant decline from the peak of almost 17.45 percent in 1996. Since nuclear power generation started in India in the early 1970s, the percentage

has not risen above 4 percent when compared to a share of around 1.8 percent in the early 1990s, nuclear power generation in India reached a peak of 3.7 percent of total generation in 2002. Despite

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high goals, robust protection, and large financial allocations, the nuclear power sector has the slowest growth rate among fuels in terms of adding capacity. Many other explanations have been put out by observers, ranging from local opposition to the slow pace of capacity expansion to large upfront capital investments, cost increases, and

technological issues.

Globally, the adoption of nuclear electricity generation is being considered a viable option. Recently, South Korea inked a deal with Poland to help build four nuclear reactors as Warsaw aims to phase out coal to lower carbon emissions. Globally, the United States leads in nuclear

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being OKLO in the USA and Danish startup Seaborg. Public-private partnerships can thaw the stigma around nuclear technology for energy security as it is an efficient and sustainable way to bridge the energy divide across demographics and help countries meet their development challenge. India with its sophisticated nuclear technology and being a member of the prestigious

Nuclear Supplier group needs to vehemently adopt nuclear energy for building a robust energy security infrastructure.

Source: <https://www.financialexpress.com/defence/modular-nuclear-reactors-forstrengthening-indias-energy-security/2957478/>, 23 January 2023.

OPINION – Jon Herskovitz

South Korea's Flirtation with Nuclear Arms Piles Pressure on US

Almost as quickly as South Korean President Yoon Suk Yeol mentioned that his nation might need to acquire nuclear weapons, his office clarified that he had no plans to actually do so. The US also batted away questions from reporters about the remark, with National Security Council spokesman John Kirby reiterating South Korea's clarification, while saying the two nations are moving forward on "improvements in extended deterrence capabilities." But as much as the two governments don't want to talk about it, Yoon's comment — given in an official policy briefing on Jan. 11 to South Korea's defense and foreign ministries — shows underlying tensions between the longstanding allies over how best to respond to North Korea's rapidly improving nuclear capabilities. Kim Jong Un tested a record number of ballistic missiles last year and recently vowed an "exponential increase" in the country's atomic weapons.

While Yoon may be aware that a push for atomic weapons would risk a crisis in the alliance and sanctions that jeopardize the nation's civilian nuclear program, accelerating the debate allows him "to pressure the US to provide more concrete, strengthened security assurances to Seoul," said Soo Kim, a former CIA Korea analyst who is now policy practice area lead at US-based management consulting firm LMI. "I don't think

Yoon expects the US to be on board in the immediate timeframe with a nuclear South Korea," she said. "But floating the idea, drawing attention to the increasingly dangerous security situation in the region, and bringing the US to the realization that the current approach will be untenable for both Seoul and Washington's security and interests may be the preliminary step."

Unlike Japan, another American ally that relies on the US's nuclear umbrella for protection, the South Korean public is more open to nuclear weapons. In a survey last year by an affiliate of Seoul National University, a record high 55.5% of respondents supported a home-grown nuclear program — up about 10 percentage points from 2021. Yoon needs to address public support for

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greater security but is aware of the risks that pursuing nuclear weapons would pose to ties with the US, according to a person familiar with the South Korean government's thinking. The person, who asked not to be identified discussing private deliberations, said South Korea has avoided

discussing the idea in formal consultations with the US for fear of putting new strain on the relationship.

South Korea can also make nuclear weapons quickly if it wanted to, as Yoon pointed out, given it already has the missiles, nuclear material and engineering know-how. But the costs of formally withdrawing from NPT would be enormous. "If South Korea went at it full-scale, applying the considerable weight of its scientific and industrial might, it might be able to produce nuclear weapons within about two years," said Mark Fitzpatrick, who has written a book on possible entrants to the nuclear club called Asia's Latent Nuclear Powers. "Adamant US opposition would be a major impediment, which is why South Korea has forgone the nuclear option, not to mention the damage to its status as a non-proliferation 'good guy,'" said Fitzpatrick, an associate fellow with the

International Institute for Strategic Studies. "Sanctions would be piled on opprobrium."

A State Department spokesperson, speaking on customary condition of anonymity, said the Yoon

administration has made clear it's not pursuing a nuclear weapon. The US is stepping up deployment of strategic assets to make sure extended deterrence meets current threats, the spokesperson said. One immediate casualty would be South Korea's energy security. Yoon aims to have nuclear plants

account for almost one-third of generation capacity by 2030 as a key tool to zero-out greenhouse gases. He touted atomic energy throughout his presidential campaign and has called for building more reactors — a reversal of the anti-nuclear policies of his predecessor, Moon Jae-in. Yoon's government is planning to build four more nuclear reactors by 2030 and

extend the life of 10 older units. An inability to make that a reality would make South Korea more reliant on coal and liquefied natural gas, and perhaps prompt it to develop a costly uranium mining industry to keep supplying material for its existing plants. "Since most of the uranium producers are

parties to the NPT, it will have tremendous difficulties to acquire necessary uranium," said Olli Heinonen, a distinguished fellow with the Stimson Center think tank in Washington who has served as the deputy director general of the International Atomic Energy Agency, the UN's nuclear watchdog. He saw Yoon's comments more as a pressure tactic to allow Seoul to have a greater say in managing the US nuclear deterrent.

At the start of the year Yoon said his government was in talks with the US on taking a more active

role in managing nuclear weapons on the Korean Peninsula, which would mark a significant shift in a decades-old policy among American allies to deter North Korea. He drew pushback from Washington, which downplayed the suggestion and said two

nations weren't discussing joint nuclear exercises because South Korea is a non-nuclear weapons state. Yet at home, Yoon faces pressure to reassure the public he's doing everything possible to protect against North Korean aggression. South Korea successfully test-fired a

submarine-launched ballistic missile in 2021, joining a small list of seven other countries to demonstrate the technology, even though it's the one not to have a nuclear warhead. South Korea once considered a nuclear program in the late 1970s under authoritarian President Park Chung-hee, declassified US documents showed. Park abandoned the plans under US pressure. The stakes are far higher now with China, Russia and North

Korea adding to their arsenals. A nuclear arms program in South Korea could lead to calls for a similar program in Japan and in Taiwan, which have the expertise to develop a program on their own.

While the Biden administration would argue that "extended deterrence"

is enough, South Koreans would worry that North Korea's nuclear-armed intercontinental ballistic missiles would deter the US similar to how Russia's atomic weapons are stopping NATO from getting directly involved in the war in Ukraine, said Frank von Hippel, a senior research physicist and professor of public and international affairs emeritus with Princeton's Program on Science & Global Security. "The US would respond that NATO does not have a treaty commitment to Ukraine," he added. "It is impossible to resolve that debate definitively."

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Source: <https://www.bloomberg.com/news/articles/2023-01-17/south-korea-s-flirtation-with-nuclear-arms-piles-pressure-on-us>, 18 January 2023.

OPINION – Andriy Zagorodnyuk

Putin's Nuclear Blackmail Must Not Prevent the Liberation of Crimea

Ukraine's remarkable military successes in the second half of 2022 have raised the prospect that Russia's invasion of the country could end in a decisive Ukrainian victory. While this outcome would be widely welcomed, there are many who remain alarmed about the potential consequences of Russia suffering such an historic defeat.

These concerns are focused primarily on Moscow's vast stockpile of nuclear weapons and the possibility that an increasingly desperate Vladimir Putin could deploy his atomic arsenal when faced with the prospect of losing the war. The Russian dictator himself has fueled these fears with a series of thinly veiled nuclear threats, declaring in September 2022, "I'm not bluffing." However, there are good reasons to believe Putin will not use nuclear weapons in Ukraine, and even better arguments against bowing to his nuclear blackmail.

Much of the speculation over Russia's nuclear saber-rattling has centered on Crimea. Ever since the Ukrainian peninsula was first occupied in early 2014, it has fallen under Russia's nuclear doctrine, which allows for the use of nuclear weapons in response to existential threats to the Russian state. Some observers claim Crimea's personal importance to Putin now makes it a key red line for Russia in the current war.

The 2014 seizure of the peninsula was hugely popular with the Russian public and is widely recognized as the defining moment of Putin's 23-year reign. This has led many to conclude that the

loss of Crimea would shatter his historical legacy and spark the collapse of his entire authoritarian regime. Such assessments may not be entirely accurate. While the significance of Crimea should not be underestimated, the course and character of the ongoing Russian invasion of Ukraine, along with the recent attempted annexation of four more Ukrainian regions, have dramatically diminished the symbolic significance of the occupied peninsula.

When Crimea was first invaded almost nine years ago, the international community was caught completely by surprise. For years, Western leaders appeared perplexed by the ongoing Russian occupation and did not know how to react. This period of indecision came to an abrupt end on February 24, 2022, when Putin launched the full-scale invasion of Ukraine. Over the past eleven months, Crimea has lost its uniqueness and has

instead become one part of a far larger geopolitical confrontation.

In September 2022, Russia officially annexed four partially occupied regions of Ukraine (Donetsk, Luhansk, Zaporizhzhia, and Kherson). These illegal annexations were carried out using the same model as the earlier seizure of Crimea, with a military

occupation followed by sham referendums conducted at gunpoint. Putin clearly hoped the international reaction to these latest annexations would be similarly underwhelming.

Unfortunately for the Kremlin, there was to be no repeat of the paralysis that had marked the international response to the Crimean takeover. Instead, Russia's September 2022 annexations were almost universally rejected and condemned. Crucially, these unrecognized annexations did not prevent Ukraine from continuing to fight back militarily in the regions now claimed as Russian by the Kremlin. Nor did they discourage the country's Western partners from backing the Ukrainian military effort.

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Just hours after Putin presided over a pompous annexation ceremony in the Kremlin, Ukraine liberated the strategically important city of Lyman in the “annexed” Luhansk region. Weeks later, Ukrainian troops completed the liberation of Kherson, the largest regional capital captured during the Russian invasion and the administrative center for another of the regions claimed by Russia.

Despite the humiliation of losing these territories so soon after declaring that they had joined Russia “forever,” Putin chose not to apply the nuclear doctrine. Ukraine’s leaders had successfully called his bluff in front of the watching world, while also demonstrating their own commitment to continuing counteroffensive operations and freeing the entire country from Russian occupation.

Source: <https://www.atlanticcouncil.org/blogs/ukrainealert/putins-nuclear-blackmail-must-not-prevent-the-liberation-of-crimea/>, 18 January 2023.

NUCLEAR STRATEGY

CHINA

China Rejects US-Japan Statement Concerning Nuclear Expansion

The Foreign Ministry denounced a US-Japan statement in which the two countries expressed concerns regarding the so-called China’s expansion of its nuclear arsenal, saying that the statement attempted to justify Washington and Tokyo’s own military buildup by misleading the public through a manipulated narrative. “China firmly rejects this and has made serious demarches,” the ministry spokesman Wang Wenbin told reporters at a regular news briefing in Beijing.

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Reiterating China’s commitment to a self-defensive nuclear strategy, Wang said China has pledged the no-first-use of nuclear weapons and has kept its nuclear capabilities at the minimum level required by national security. “As long as a country does not use nuclear weapons against China, it does not need to worry about China’s nuclear weapons,” Wang said.

In fact, the spokesman said it is the negative movements of the US and Japan that the international community should be vigilant of. He referred to Washington’s efforts to form a Cold-War-style small clique by selling nuclear-powered submarines to its allies and Tokyo’s opposition to the US’ relinquishment of its policy of first use of nuclear weapons. “We urge and advise the two countries to discard the Cold-War mentality and bloc confrontation, fulfill their disarmament and nonproliferation obligations and play their due roles in safeguarding regional and international peace and stability,” Wang said.

Source: <https://www.chinadaily.com.cn/a/202301/16/WS63c5238aa31057c47eba9e64.html>, 16 January 2023.

USA

U.S. Strongly Committed to Japan Defense, Biden Tells Kishida, Hails Military Boost

President Biden told Japanese Prime Minister Kishida on Friday (13 Jan) the United States was “fully, thoroughly, completely” committed to Japan’s defense and praised Tokyo’s security build up, saying the nations had never been closer. Kishida is

in Washington on the last stop in a tour of the G7 industrial powers and has been seeking to bolster long-standing alliances amid rising concern in Japan, and the United States, about mounting

The Foreign Ministry denounced a US-Japan statement in which the two countries expressed concerns regarding the so-called China’s expansion of its nuclear arsenal, saying that the statement attempted to justify Washington and Tokyo’s own military buildup by misleading the public through a manipulated narrative.

regional security threats from China, North Korea and Russia. In a meeting at the White House, Biden called it a "remarkable moment" in the U.S.-Japan alliance. He said the two countries had never been closer. "Let me be crystal clear: The United States is fully, thoroughly, completely committed to the alliance, and importantly ... to the defense of Japan," he said, while also thanking Kishida for strong leadership in working closely on technology and economic issues.

We are modernizing our military alliances, building on Japan's historic increase in defense spending, and new national security strategy," Biden said. Kishida thanked Biden for U.S. work on regional security and said: "Japan and the United States are currently facing the most challenging and complex security environment in recent history.

"We are modernizing our military alliances, building on Japan's historic increase in defense spending, and new national security strategy," Biden said. Kishida thanked Biden for U.S. work on regional security and said: "Japan and the United States are currently facing the most challenging and complex security environment in recent history." He said Tokyo had formulated its new defense strategy released last month "to ensure peace and prosperity in the region." He said the two countries shared fundamental values of democracy and the rule of law "and the role that we are to play is becoming even greater." Kishida said he looked forward to a "candid" exchange of views on issues including "a free and open Indo-Pacific" - language the two sides use to describe efforts to push back against China - the G7, which Japan's currently chairs, and climate change. ...

Dramatic Military Change: Japan last month announced its biggest military build-up since World War Two - a dramatic departure from seven decades of pacifism, largely fueled by concerns about Chinese actions in the region. "Biden commended Japan's bold leadership in fundamentally reinforcing its defense capabilities and strengthening diplomatic efforts," according to a joint U.S.-Japan statement issued after the

meeting. U.S. and Japanese foreign and defense ministers met on Wednesday (11 Jan) and announced increased security cooperation following nearly two years of talks and the U.S.

officials praised Tokyo's military buildup plans. Japan's military reform plan will see it double defense spending to 2% of GDP and procure missiles that can strike ships or land-based targets 1,000 km (600 miles) away. Before the meeting, a senior U.S. official said Biden and Kishida were expected to discuss security issues and

the global economy and that their talks are likely to include control of semiconductor-related exports to China after Washington announced strict curbs last year.

... A Japanese official said economic security, including semiconductors, was likely to be discussed, but that no announcement was

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expected on that from the meeting. Biden and Kishida committed to "strengthening vital trilateral cooperation" among the United States, Japan and South Korea, said the joint statement, which follows North Korea's decision to exponentially increase its nuclear force and codify its right to a first

strike. Kishida's visit follows one by Biden to Tokyo in May and a meeting between the two at a November regional summit in Cambodia.

Source: <https://www.reuters.com/world/us/biden-welcome-japans-kishida-historic-military-reforms-white-house-2023-01-13/>, 14 January 2023.

MOROCCO-USA

Morocco, US Gear Up for 2023 African Lion Military Exercise

The annual exercise will take place in Morocco between May 22 and June 16, 2023. The military headquarters of the General Staff of the South

Zone in Morocco's Agadir hosted the planning meeting of the 2023 African Lion military exercise between January 9 and 20, 2023. The meeting sought to ensure that the 2023 African Lion exercise is well-coordinated and executed. Representatives from Morocco's Royal Armed Forces (FAR) and the United States Armed Forces attended the session. The planning process included identifying the various activities of this year's African Lion exercise, as well as the sites where they will take place, indicated a statement from FAR's General Staff ... The 2023 military event will feature various joint exercises, including land, airborne, maritime, Special Forces, and civil-military action operations, added the statement. The military exercise is also set to feature a CBRN - Chemical, Biological, Radiological, and Nuclear - decontamination operation, in which protective measures are taken in situations of CBRN hazards. The Moroccan and American sides have also established the details of the musical show that will be held on the sidelines of the military exercise, featuring the FAR and the 23rd Utah State Army bands.

Source: <https://www.moroccoworldnews.com/2023/01/353678/morocco-us-gear-up-for-2023-african-lion-military-exercise>, 23 January 2023.

BALLISTIC MISSILE DEFENCE

INDIA

Indian Army Displays 'Made in India' Weapons Ahead of Republic Day

Ahead of Republic Day 2023, the Indian Army on 24 January displayed 'Made In India' weapons including Akash air defence missiles and BrahMos supersonic cruise missiles at the India Gate. The weapons displayed included K-9 Vajra howitzers, MBT Arjun, Nag anti-tank guided missiles,

The 2023 military event will feature various joint exercises, including land, airborne, maritime, Special Forces, and civil-military action operations, added the statement. The military exercise is also set to feature a CBRN - Chemical, Biological, Radiological, and Nuclear - decontamination operation, in which protective measures are taken in situations of CBRN hazards.

BrahMos supersonic cruise missiles, Akash air defence missiles and the Quick Reaction Fighting Vehicles. Akash Missile system is a newly inducted weapon system which is one of the most advanced weapon systems currently in use today indigenously manufactured and designed by Bharat Dynamics and DRDO. This system is entirely configured on mobile platforms.

Source: <https://www.aninews.in/news/national/general-news/indian-army-displays-made-in-india-weapons-ahead-of-republic-day20230124183025/>, 24 January 2023.

EMERGING TECHNOLOGIES AND DETERRENCE

CHINA

Call for PLA to Use AI for 'Smart Deterrence' Against US Over Taiwan

The People's Liberation Army should make more use of artificial intelligence to strengthen its deterrence strategy against the United States over Taiwan, according to a Chinese expert on Taiwanese affairs.

Ni Yongjie, deputy director of the Shanghai Institute of Taiwan Studies, said the PLA should conduct blockade exercises around the island and use AI technology to deter US interference and Taiwanese independence forces. He said the concept of "smart deterrence" was being studied within the PLA. Ni made the remarks in an article in the journal *Cross-Strait Taiwan Studies*, which was posted on its social media account earlier. He suggested the PLA could become a leader in future intelligent warfare, drawing on capabilities in AI, cloud computing, big data, cyber offence and defence, and unmanned equipment. Ni also called for the PLA to normalise military drills that cross the median line of the Taiwan Strait – the de facto sea border separating mainland China from Taiwan – and that approach the baseline of the island's territorial waters and cut off transport.

The weapons displayed included K-9 Vajra howitzers, MBT Arjun, Nag anti-tank guided missiles, BrahMos supersonic cruise missiles, Akash air defence missiles and the Quick Reaction Fighting Vehicles.

It comes after the PLA staged unprecedented live-fire exercises that encircled the self-ruled island amid heightened tensions after then-US House speaker Nancy Pelosi visited Taiwan in August. The trip angered Beijing, which saw it as a violation of its sovereignty. The PLA also ramped up drills around the island after US President Biden last month signed the latest National Defence Authorisation Act, which includes financing arms for Taiwan. Ni said future PLA exercises could go beyond traditional amphibious landings and use intelligent warfare tactics for blockades and network disconnection. According to Ni, both war games and virtual confrontation using unmanned systems could be used to achieve the goal of zero casualties and a “lightning-fast” seizure of an island. He said simulation exercises could be conducted on the Taiwanese-controlled island of Taiping – located in the contested Spratlys in the South China Sea – as well as Dongsha and Penghu in the future.

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The National Defence Authorisation Act signed by Biden established the US military budget for the next financial year and includes US\$10 billion worth of security assistance to Taiwan over the next five years, prompting protests from Beijing.

The exercises could constitute a powerful deterrent against “Taiwan independence” separatists and foreign interference, in addition to conventional and nuclear deterrence, Ni wrote. He also called for the use of economic, legal, psychological and cyber tools to contain Taiwan independence forces, giving the example of regulating cross-strait trade, stopping imports of agricultural products from areas where those forces are governed, and halting the free-trade framework between the two sides of the strait. According to a report released last year by the Centre for Security and Emerging Technology at Georgetown University, the PLA has been using AI to simulate war games for invasion operations against Taiwan, as well as to identify undersea vehicles, track US Navy ships and deploy electronic countermeasures, among other tasks.

Meanwhile, American think tank the Centre for Strategic and International Studies warned in a recent report that while Beijing would be unlikely to succeed in seizing Taiwan in a hypothetical invasion of the island in 2026, such a conflict would wreak havoc on both sides of the strait, as well as the US and Japan, with total casualties running into the tens of thousands. The National Defence Authorisation Act signed by Biden established the US military budget for the next financial year and includes US\$10 billion worth of security assistance to Taiwan over the next five years, prompting protests from Beijing. Beijing sees Taiwan as part of its territory and has not ruled out the use of force to take control of it. Most countries, including the US, do not recognise Taiwan as an independent state. Washington, however, opposes any attempt to take the island by force.

Source: <https://www.scmp.com/news/china/military/article/3206780/call-pla-use-ai-smart-deterrence-against-us-over-taiwan>, 15 January 2023.

taiwan, 15 January 2023.

NUCLEAR ENERGY

BANGLADESH

Bangladesh Pins Hopes on Nuclear Energy as its Way Out of Power Cuts and Rising Fuel Prices

... The Rooppur nuclear plant is being built by Rosatom, Russia’s state-owned nuclear energy corporation, using Russian technology and a Russian loan of \$11.38 billion to be repaid over two decades from 2027. With a planned power generation capacity of 2,400 megawatts, which is expected to power 15 million households, the Rooppur nuclear plant will add Bangladesh to the list of more than 30 nations that have operating reactors. Since the summer, Bangladesh has grappled with power cuts amid spiking fuel prices

around the world – and nuclear energy is seen by some experts as a potential way out. Ijaz Hossain, professor and dean of engineering at the Bangladesh University of Engineering and Technology in Dhaka, said the nuclear plant could help ease the country's power problems and increase its use of low-carbon energy. But construction delays, cost concerns and public fears about nuclear safety are clouding the outlook for the new plant.

... In the coming years, Bangladesh plans to rely less on natural gas – which now accounts for about half of power production – although it is ramping up coal-fired power in the short term to fill the gap. Last year the power ministry announced an ambitious goal to source 40% of the nation's electricity from renewables – including solar, wind and hydro – by 2041. So far, renewables account for only about 950 megawatts out of total power capacity of 25,700 megawatts. But treating nuclear as a renewable or green energy source remains controversial worldwide, as the spent fuel left after power production is not fully recyclable, and nuclear waste is hazardous.

Nuclear dropped to below 10% of global power generation in 2021, although the recent energy crisis driven by Russia's invasion of Ukraine has seen some reawakening of interest. The goal of developing a nuclear power plant in Bangladesh dates back to the 1960s, but plans adopted by successive governments over the decades were not implemented due to a lack of funding and skilled engineers. In 2011, an agreement was made with Russia to build a nuclear plant, and in 2017 construction finally began at Rooppur, 87 miles (140 km) west of Dhaka, on two nuclear power units capable of generating 1,200 megawatts each. Construction work is progressing at full speed, said Alexey Deriy, vice

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The aim of the bill is to respond to the "urgency of a climate crisis which threatens our ecosystems, our societies, the future of the young generations and, on the other hand, of a crisis of sovereignty and security of energy supply in 2022 following the Ukrainian conflict".

president-director for the Rooppur nuclear power plant project managed by Atomstroyexport, a Russian engineering company belonging to Rosatom.

Source: <https://scroll.in/article/1041569/bangladesh-pins-hopes-on-nuclear-energy-as-way-out-of-power-cuts-and-spiking-fuel-prices>, 15 January 2023.

FRANCE

French Bill on Accelerating Nuclear New Build Progresses to Senate

The French Senate has begun discussing a bill aimed at accelerating procedures related to the construction of new nuclear facilities near existing nuclear sites and to the operation of existing facilities. In February 2022, President Emmanuel Macron proposed the construction of six new EPR2 reactors, with an option for a further eight EPR2 reactors to follow. In early November 2022, the French Council of Ministers approved draft legislation intended to streamline the administrative and bureaucratic processes needed to build new nuclear power plants. According to the official report on the cabinet meeting, the aim of the bill is to respond to the "urgency of a climate crisis which threatens our ecosystems, our societies, the future of the young generations and, on the other hand, of a crisis of sovereignty and security of energy supply in 2022 following the Ukrainian conflict". On 16 November, the Senate's Economic Affairs Committee appointed Daniel Gremillet rapporteur on the bill. The Committee examined the report by Gremillet on 11 January and established its text on the bill. Included in the Committee's amendments was the removal of the objective of reducing the nuclear share of France's electricity production to 50% by 2035, as well as the inclusion of SMRs in possible reactor types and hydrogen electrolysers.

The Senate began its deliberation of the bill on 17

January and is scheduled to vote on it on 24 January. "The text makes it possible to bring together the legal, financial and organisational conditions necessary for the relaunch of a civil nuclear policy," the Senate said. In addition to simplifying the administrative procedures for building authorisations for new reactors, the bill also "repeals the obstacles posed to the revival of nuclear power" and "proposes a new nuclear strategy". The legislation provides that the next five-year energy law, expected before 1 July, sets decarbonisation objectives and "provides for an assessment to be carried out between now and this five-

The legislation provides that the next five-year energy law, expected before 1 July, sets decarbonisation objectives and "provides for an assessment to be carried out between now and this five-year law on the needs generated by the 14 EPRs mentioned by the government and the nine others studied by RTE on the situation of the EDF group, public finances and the electricity market, needs in terms of professions and skills, safety and security and the fuel cycle".

year law on the needs generated by the 14 EPRs mentioned by the government and the nine others studied by RTE on the situation of the EDF group, public finances and the electricity market, needs in terms of professions and skills, safety and security and the fuel cycle". The bill also establishes "a specific procedure for compatibility of urban planning documents", with a view to the construction of new reactors, and exempts them from certain planning permissions. It also grants nuclear operators the possibility of using an immediate possession procedure to obtain land on which to build new reactors. Following the Senate vote next week, the bill will go to the lower house, the National Assembly, for consideration. The bill is the counterpart to a bill which was voted on 10 January by the National Assembly, in its first reading, on the acceleration of renewable energy sources.

Nuclear accounts for almost 75% of France's power production, but former French president Francois Hollande's government announced in 2014 that nuclear capacity would be capped at the current

level of 63.2 GWe and be limited to 50% of France's total output by 2025. The French Energy Transition for Green Growth Law, adopted in August 2015, did not call for the shutdown of any currently operating power reactors, but it meant EDF would have to close older reactors in order to bring new ones online. However, under a draft energy and climate bill presented in May 2019, France will now delay its planned reduction in the share of nuclear power in its electricity mix to 50% from the current 2025 target to 2035. In February, President Macron announced that the time

was right for a nuclear renaissance in France, saying the operation of all existing reactors should be extended without compromising safety and unveiling a proposed programme for six new EPR2 reactors, with an option for a further eight EPR2 reactors to follow.

South Korea will rely more on nuclear power generation in its efforts to reach net zero by 2050, according to its latest plan, which envisages a lower share of renewable power generation in the electricity mix. South Korea will aim to have nuclear energy account for nearly one-third of its electricity generation capacity by 2030, while renewables are set to meet 21.6% of power demand, down from a previous forecast of just over 30%, per government documents released.

Source: <https://www.world-nuclear-news.org/Articles/French-bill-on-accelerating-nuclear-new-build-prog>, 17 January 2023.

SOUTH KOREA

South Korea Bets Big on Nuclear Energy at the Expense of Renewables

South Korea will rely more on nuclear power generation in its efforts to reach net zero by 2050, according to its latest plan, which envisages a lower share of renewable power generation in the electricity mix. South Korea will aim to have nuclear energy account for nearly one-third of its electricity generation capacity by 2030, while renewables are set to meet 21.6% of power demand, down from a previous forecast of just over 30%, per

government documents released. In earlier plans, South Korea was targeting a 24% share of nuclear power generation capacity. Currently, 25 reactors provide about one-third of South Korea's electricity from 23 GWe of plant, according to the World Nuclear Association. President Yoon Suk-yeol, elected in March 2022, scrapped his predecessor's policy to phase out nuclear energy over some 45 years. The new president has set a target for nuclear to provide at least 30% of the country's electricity in 2030. South Korea's latest plan also calls for a lower share of LNG in the power generation mix as part of the country's net-zero targets, as many countries have moved to bolster their energy security after the Russian invasion of Ukraine and the market turmoil that followed.

Since the Russian invasion of Ukraine, many Western allies of the U.S. and the EU have stepped up efforts to ensure energy security and depend less on energy commodities. Many of those have chosen to rely more on nuclear energy.

[Recently], Sweden's government proposed changes in the current legislation to allow the construction and operation of more nuclear reactors as it looks to strengthen its energy security. Even Japan is bringing back nuclear power as a key energy source, looking to protect its energy security in the crisis that has led to surging fossil fuel prices. The Japanese government confirmed in December a new policy for nuclear energy, which the country had mostly abandoned since the Fukushima disaster in 2011. A panel of experts under the Japanese Ministry of Industry decided that Japan would allow the development of new nuclear reactors and allow available reactors to operate after the current limit of 60 years.

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Rolls-Royce has unveiled its Novel nuclear, micro-reactor, which uses uranium as fuel and could be applied in space missions. The company claims that each uranium particle is encapsulated in multiple protective layers, acting as a containment system, allowing the micro-reactor to withstand extreme conditions.

Source: <https://oilprice.com/Latest-Energy-News/World-News/South-Korea-Bets-Big-On-Nuclear-Energy-At-The-Expense-Of-Renewables.html>, 12 January 2023.

UK

Rolls-Royce Goes Nuclear: Unveils 1st Micro-Reactor for Space Propulsion and Mining

Rolls-Royce has unveiled its Novel nuclear, micro-reactor, which uses uranium as fuel and could

be applied in space missions. The company claims that each uranium particle is encapsulated in multiple protective layers, acting as a containment system, allowing the micro-reactor to withstand extreme conditions. In essence, it is a factory-built nuclear power plant that offers clean and affordable energy.

It is the result of Rolls-Royce's SMR business Reports in 2021, had speculated that Rolls-Royce is working on a nuclear reactor to propel space rockets and power mining operations on other planets such as Moon and even Mars Now, the Rolls-Royce innovations and

space website lists the micro-reactor that will aid in achieving high-mac propulsion using gas turbine and ramjet technology. It also claims that harnessing the natural decay of nuclear material inside the reactor will provide reliable power in space. Nuclear reactor decay and release heat over decades, generating power. The power can be used to power scientific and communications equipment.

As a self-contained and power-dense solution, these micro-reactors can provide power for space exploration of a planetary surface such as mining. Rolls-Royce has signed an innovative contract with the UK Space Agency, to explore the applications of such nuclear power options.

Source: <https://timesofindia.indiatimes.com/auto/news/rolls-royce-goes-nuclear-unveils-1st-micro-reactor-for-space-propulsion-and-mining/articleshow/97484589.cms>, 31 January 2023.

USA

US Clean-Up Mission Looks to Build on 2022 Success

The US Department of Energy Office of Environmental Management achieved most of its goals for calendar year 2022, with all but three of the priorities on its mission "scorecard" for the year complete or partially complete. All six of its primary mission areas have received increased funding under the recently enacted budget for fiscal 2023. The office - known as EM - was established in 1989 to address the environmental legacy from five decades of US nuclear weapons production and government-sponsored nuclear energy research, including sites with large amounts of radioactive wastes, used nuclear fuel, excess plutonium and uranium, thousands of contaminated facilities, and contaminated soil and groundwater. It is responsible for cleaning up 107 sites across the country, in what it describes as the largest environmental cleanup program in the world.

EM's *CY2022 Mission and Priorities Scorecard* details key priorities achieved or exceeded in 2022, including shipments of transuranic waste from the EM Los Alamos Field Office to the Waste Isolation Pilot Plant (WIPP) in New Mexico; the demolition of a former uranium process building, marking the most significant cleanup milestone to date at the Portsmouth Site; and issuing the first-ever EM Program Plan with a

decision roadmap that will be used to guide the programme over the next 20 years. ... EM's budget of USD8.3 million for fiscal 2023, which has now been enacted with US President Joe Biden's signature in late December of the Fiscal Year 2023 Consolidated Appropriations Act, is 5% more than the programme received in 2022 and 6% more than proposed in the FY23 President's Budget Request. All six of EM's primary mission areas - Spent Nuclear Materials & Spent Nuclear Fuel, Transuranic Waste, Soil & Groundwater, Radioactive Tank Waste, Facilities Deactivation & Decommissioning, and Site Services - are to receive funding increases, as well as EM site budgets. ...

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Source: <https://www.world-nuclear-news.org/Articles/US-cleanup-mission-looks-to-build-on-2022-success>, 13 January 2023.

Nuclear Energy Gets Boost as Small Reactor Design Certified for Use in US

The U.S. Nuclear Regulatory Commission has certified the design for what will be the United States' first small modular nuclear reactor. The rule that certifies the design was published in the Federal Register. It means that companies seeking to build and operate a nuclear power plant can pick the design for a 50-megawatt, advanced light-water small modular nuclear reactor by Oregon-based NuScale Power and apply to the NRC for a license. It's the final determination that the design is acceptable for use, so it can't be legally challenged during the licensing process when someone applies to build and operate a nuclear power plant, NRC spokesperson Scott Burnell said. The rule becomes effective in late February.

The U.S. Energy Department said the newly

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approved design “equips the nation with a new clean power source to help drive down” planet-warming greenhouse gas emissions. It’s the seventh nuclear reactor design cleared for use in the United States. The rest are for traditional, large, light-water reactors. ... The first small modular reactor design application package included over 2 million pages of supporting materials, Hughes added. However, David Schlissel at the Ohio-based Institute for Energy Economics and Financial Analysis expressed concerns about the costs. Schlissel, who has studied the history of the nuclear power industry and the finances of the NuScale project, expects they will continue to go up, which could limit how many NuScale reactors are built. He said he thinks they’re not competitive in price with renewables and battery storage.

Hughes said from wind and solar to hydrogen and nuclear, energy projects have seen cost increases due to changing financial market dynamics, interest rate hikes and inflationary pressures on the sector’s supply chain that have not been seen in decades. NuScale’s VOYGR power plant remains a cost competitive source of reliable, affordable and carbon-free energy, she added. For many, nuclear power is emerging as an answer as states and countries transition away from coal, oil and natural gas to reduce greenhouse gas emissions and stave off the worst effects of a warming planet. Roughly 40 serious concepts are in development for the next generation of advanced nuclear reactors worldwide. China was the first to connect a next-generation reactor to its grid to produce about 200 megawatts of electricity. A high-temperature, gas-cooled reactor began operating in 2021.

The U.S. Energy Department said it provided more than \$600 million since 2014 to support the design,

licensing and siting of NuScale’s VOYGR small modular reactor power plant and other domestic small reactor concepts. The department is working

with Utah Associated Municipal Power Systems to demonstrate a six-module NuScale VOYGR plant at the Idaho National Laboratory. The first module is expected to be operational by 2029. NuScale has signed 19

agreements in the U.S. and internationally to deploy its small reactor technology. Assistant Secretary for Nuclear Energy Kathryn Huff said small modular reactors are no longer an abstract concept. “They are real and they are ready for deployment thanks to the hard work of NuScale, the university community, our national labs, industry partners, and the NRC,” Huff said in a statement. “This is innovation at its finest and we are just getting started here in the U.S.” NuScale has also applied to the NRC for approval of a larger design, at 77 megawatts per module,

and the agency is checking the application for completeness before starting a full review, Burnell said.

Source: Jennifer Mcdermott and the Associated Press, [https://](https://fortune.com/2023/01/21/nuclear-energy-nuscale-small-nuclear-reactor-design-certified-for-use-in-america/)

fortune.com/2023/01/21/nuclear-energy-nuscale-small-nuclear-reactor-design-certified-for-use-in-america/, 21 January 2023.

The U.S. Energy Department said the newly approved design “equips the nation with a new clean power source to help drive down” planet-warming greenhouse gas emissions. It’s the seventh nuclear reactor design cleared for use in the United States.

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NUCLEAR COOPERATION

SAUDI ARABIA–USA

Saudi-US Partnership to Develop Clean and Nuclear Energy

The governments of Saudi Arabia and the United States intend to enhance cooperation between the two countries, in accordance with their respective national laws, through the Partnership Framework for Clean Energy Development. The partnership framework for Clean Energy

Development between the two countries has identified the cooperation fields in which KSA and the US will work to enhance, in order to achieve their ambitions in spreading clean energy and climate action. The *Umm Al-Qura* newspaper has published the details of partnership framework and the potential cooperation fields. The partnership framework stipulated in establishing a cooperation in clean energy field, as the two parties intend to work together to determine the cooperation fields in clean energy. This cooperation would strengthen the common interests and strategic goals of each participant, and also to organize cooperation in clean energy field to study innovation, development, financing, and establishing infrastructure for clean energy in KSA and the US.

The partnership has identified several potential cooperation fields between the two countries in terms of civil nuclear energy and uranium, of which are the cooperation in basic researches, and development in the field of civil nuclear energy. The cooperation fields include the exchange of experiences in various aspects, such as the field of developing advanced reactor technologies. Moreover, exchanging experiences in the field of safe and proper disposal of nuclear waste; medical and agricultural applications; cooperation in research and development in the uranium exploration field; cooperation in uranium mining and processing; and various other fields of civil nuclear energy and uranium development.

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Recognising the importance of nuclear power plants as a critical source of energy security and an important element for the growth of the clean economy, and given the existing deep level of cooperation achieved in this area, the two leaders expressed their determination to deepen and accelerate collaboration in the peaceful nuclear energy sector, both by successfully completing the Barakah Nuclear Energy Plant project and by jointly pursuing additional nuclear projects, whether in the UAE or third countries"

Source - <https://www.zawya.com/en/economy/gcc/saudi-us-partnership-to-develop-clean-and-nuclear-energy-v2ji0cu4>, 15 January 2023.

SOUTH KOREA-UAE

Korea and UAE Agree to Expand Nuclear Cooperation

South Korea and the United Arab Emirates have agreed to "deepen and accelerate collaboration in the peaceful nuclear energy sector". Several MoUs were signed during a meeting between Korean President Yoon Seok-yeol and UAE President Mohammed bin Zayed Al-Nayhan. Yoon met

with Al-Nahyan in Abu Dhabi on 15 January whilst on a state visit to the UAE. This marked the first state visit since the establishment of diplomatic ties between South Korea and the UAE in 1980 and the 10th visit to the UAE by a Korean president. During his visit, Yoon visited the Barakah nuclear power plant, supplied by Korea. "During the summit, the two leaders agreed to deepen and further develop the Special Strategic Partnership between the two countries," a joint statement said. "In particular, the two leaders agreed to strengthen strategic cooperation in four key areas: conventional energy and clean energy, peaceful nuclear energy, economy and investment, and defence technology; as well as in other areas of mutual interest, including space, emerging industries and culture."

A total of 13 cooperation agreements in the fields of nuclear power, energy, investment, defence

industry, and climate change were signed in the presence of the heads of the two countries. "Recognising the importance of nuclear power plants as a critical source of energy security and an important element for the growth of the clean economy, and given the existing deep level of cooperation achieved in this area, the two leaders expressed their determination to deepen and accelerate collaboration in the peaceful nuclear energy sector, both by successfully completing the Barakah Nuclear Energy Plant project and additional nuclear projects, whether in the UAE or third countries" the joint statement said. It added: "The two leaders welcomed further cooperation in the field of peaceful nuclear energy through the UAE-ROK High-level Consultation on Nuclear Cooperation and agreed to seek ways to expand this cooperation into new areas, including evaluating the potential of SMRs."

The agreements signed included a Net-Zero Acceleration Strategic Cooperation MoU between Korea Hydro & Nuclear Power (KHNP) and the Emirates Nuclear Energy Corporation (ENEC). Through the signing of the MOU, ENEC and KHNP plan to form a consultative body in various fields in the future and expand practical cooperation in the field of developing export markets for nuclear power plants in third countries and joint procurement of business finance. In addition, the two companies plan to cooperate closely in future technology development and R&D joint research, such as SMRs and micro-reactors.

... Korea's Nuclear Safety and Security Commission (NSSC) also signed an administrative agreement with the UAE's Federal Authority for Nuclear

Recognising the importance of nuclear power plants as a critical source of energy security and an important element for the growth of the clean economy, and given the existing deep level of cooperation achieved in this area, the two leaders expressed their determination to deepen and accelerate collaboration in the peaceful nuclear energy sector, both by successfully completing the Barakah Nuclear Energy Plant project and by jointly pursuing additional nuclear projects, whether in the UAE or third countries

Under a USD20 billion deal announced in December 2009, four Korean-designed APR1400 reactors are being built at Barakah by a consortium led by the Korea Electric Power Corporation. First concrete for Barakah 1 was poured in July 2012, while that for units 2-4 was poured in April 2013, September 2014 and July 2015, respectively.

Regulation (FANR). This agreement "stipulates the obligations related to nuclear safety measures and export controls between the two countries, and has the effect of simplifying the nuclear export permit procedure between the two countries," NSSC said. ... Under a USD20 billion deal announced in December 2009, four Korean-designed APR1400 reactors are being built at Barakah by a consortium led by the Korea Electric Power Corporation. First concrete for Barakah 1 was poured in July 2012, while that for units 2-4 was poured in April 2013, September 2014 and July 2015, respectively. The first three of these units were connected to the grid in August 2020, September 2021 and October 2022, respectively.

Source: <https://world-nuclear-news.org/Articles/Korea-and-UAE-agree-to-expand-nuclear-cooperation>, 16 January 2023.

NUCLEAR SECURITY

AUSTRALIA

Australian Nuclear Body Joins Hunt for Missing Radioactive Capsule

Members from Australia's nuclear safety agency have joined the search for a tiny but highly-radioactive capsule after it was misplaced in transit on a stretch longer than the length of Great Britain earlier this month, sending Western Australia under a radiation alert. The crew of the top nuclear safety agency is now assisting in the

hunt with specialised car-mounted and portable detection equipment.

Officials from the Australian Radiation Protection and Nuclear Safety Agency said they were working with the Western Australian government to find the capsule. Additionally, radiation services specialists from the Australian Nuclear Science and Technology Organisation have also joined the search operation along with detection and imaging equipment, the agency said. "It will take approximately five days to travel the original route, an estimated 1400km, with crews travelling north and south along Great Northern Highway," said Darryl Ray, the acting superintendent for Western Australia's Department of Fire and Emergency Services.

A fresh alert has also been issued to motorists along Australia's longest highway to be careful when approaching the search parties, the state emergency officials said as they warned locals of vehicles carrying radiation detectors moving in the area at slow speeds. The capsule was inside a truck that was travelling from the desert Gudai-Darri mine site north of Newman to a storage facility in Perth. The caesium-137 ceramic source, commonly used in radiation gauges, emits dangerous amounts of radiation, equivalent to receiving 10 X-rays in an hour.

The radioactive silver capsule, 6mm in diameter and 8mm long, could cause skin burns and prolonged exposure could cause cancer. The small Caesium-137 capsule was reported missing more than two weeks after being transported from the mining site. The truck reportedly carrying the capsule arrived at a Perth

depot on 16 January, following which the emergency services were notified of the missing capsule on 25 January.

Officials have said it is likely that the vibrations from the truck caused the screws and the bolts holding together the gauge to loosen, causing the capsule to fall out of the package and then out of a gap in the truck. The mining corporation responsible for transporting the capsule has apologised "for the alarm" and said it was "taking this incident very seriously". Simon Trott, the firm's iron ore division chief, said: "We have completed radiological surveys of all areas on site where the

device had been, and surveyed roads within the mine site." He added that Rio Tinto was conducting its own investigation into how the loss occurred.

Source: <https://www.independent.co.uk/news/world/australasia/australia-radioactive-capsule-nuclear-agency-b2272707.html>, 31 January 2023.

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FINLAND

The reserve will include personal protective and measuring equipment, pharmaceuticals, and antibodies for CBRN accidents that could affect first responders and civilians. The materials will be decentralised in secret locations around Finland. The project will be funded €242 million by the Commission and should be completed by autumn 2026. The first quantities of supplies are scheduled to be available by 2024.

Finland Chosen as EU's Common Reserve of Rescue Equipment, Medical Supplies

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locations around Finland. The project will be funded €242 million by the Commission and should be completed by autumn 2026. The first quantities of supplies are scheduled to be available by 2024. The use of a lot of the medicines and antidotes used in CBRN incidents

is rare. But, if needed, the aim is to send the stored material to a disaster or crisis area within 12 hours of the offer of assistance being accepted.

The EU upgraded its Civil Protection Mechanism in 2019 and launched rescEU – which the CBRN reserves in Finland will be part of – to protect citizens from disasters and manage emerging risks. Russia's war of aggression against Ukraine has confirmed the need to strengthen the EU CBRN preparedness. That's why the rescEU CBRN reserves will provide the EU with a significant safety pillow enabling a quick and coordinated response at the EU level. I would like to congratulate Finland for being the first Member State to develop a CBRN strategic reserve under rescEU," Commissioner for Crisis Management Janez Lenarčič said in a press release on Tuesday (16 Jan). The project will be carried out by the Interior and Social Affairs Ministries together with the Finnish Institute for Health and Welfare, the National Emergency Supply Agency, and the Radiation and Nuclear Safety Authority.

Source: <https://www.euractiv.com/section/politics/news/finland-chosen-as-eus-common-reserve-of-rescue-equipment-medical-supplies/>, 18 January 2023.

NUCLEAR SAFETY

EUROPE

CERN Publishes its First Nuclear Safeguards Policy

CERN has recently published a Nuclear Safeguards Policy. This Policy formalises CERN's longstanding commitment to non-proliferation. It serves both for external communication purposes and as a basis for nuclear safeguards procedures within the Organization. Nuclear safeguards cover the prevention or timely detection of diversion of nuclear material from peaceful nuclear activities to the manufacture of nuclear weapons. Safeguards are achieved by means of nuclear

security (i.e. physical protection and nuclear material accounting and control).

Safeguards are implemented by states that are parties to the non-proliferation treaties of the IAEA. CERN, which manages some nuclear materials used for its scientific activities (such as thorium, uranium and plutonium), is not directly subject to these treaties. However, the Organization collaborates closely with the competent Host States authorities to help them fulfil their obligations towards the IAEA. CERN manages its nuclear materials responsibly, thanks to its nuclear materials controller, its accountants and custodians. The Nuclear

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Safeguards Policy is a first step in formalising these good practices. The main principles of this Policy, and in particular the requirement to justify and minimise the use of any nuclear materials, will be implemented through a set of nuclear safeguards procedures currently being drafted.

Source: <https://home.cern/news/official-news/cern/cern-publishes-its-first-nuclear-safeguards-policy>, 24 January 2023.

GENERAL

IAEA Grossi in Rome: Ukraine's Nuclear Safety and Security, Pope Francis

Italy is a steadfast partner in the challenges facing the IAEA today with a long history of achievements in the nuclear field, Director General Rafael Mariano Grossi emphasized as he travelled to Rome to meet with country's leadership. In a two-day visit, Mr Grossi met with Italy's President and Foreign Minister, as well as His Holiness Pope Francis, to engage on a variety of issues including nuclear safety and security in Ukraine, nuclear non-proliferation, and the role of nuclear science and technology in combating climate change. In his meeting with IAEA established a permanent presence at ZNPP beset with power outages caused by shelling, putting nuclear safety and security at the plant at risk. Mr Grossi thanked Mr

Mattarella for his support to the IAEA's mission.

Meeting with Italian Deputy Prime Minister and Foreign Minister Antonio Tajani, Mr Grossi thanked Italy for its essential backing to the Agency's work, including through its role as the chair of the IAEA's General Conference — the organization's supreme decision-making body. Mr Tajani expressed his full support to the IAEA's activities in Ukraine, saying: "Regarding Zaporizhzhya, we are working to protect Europe from possible damage." In

September, Italy joined Canada, France, Germany, Japan, the Republic of Korea, Switzerland, the United Kingdom, Ukraine, the United States of America, as well as the European Union, in issuing a joint statement of support for establishing a nuclear safety and protection at ZNPP.

... Mr Grossi and the Pope also spoke about the potential of nuclear science and technology in addressing the worsening global climate crisis. Over the past five decades, nuclear power has cumulatively avoided the emission of about 70 gigatonnes (Gt) of carbon dioxide (CO₂) — equivalent to the emissions from the entire global power sector in the five years between 2015 and 2019 — and continues to avoid more than 1 Gt CO₂ annually.

After the meeting, Mr Grossi said that he deeply appreciated the encouraging words of the Pope regarding the importance of the IAEA's work in promoting dialogue and solutions based on multilateral negotiations, including in Ukraine.

Source: <https://www.iaea.org/newscenter/news/iaea-grossi-in-rome-ukraines-nuclear-safety-and-security-pope-francis>, 12 January 2023.

JAPAN

Japan Nuclear Power Plant Shut Down Automatically, No Radiation Rise Seen

A reactor at a Japanese nuclear power plant automatically shut down on 30 January after an alert, but no radiation rise was detected and regulators said they were investigating the cause. The reactor at the Takahama power plant in central Fukui region halted at around 3:20 pm (0620 GMT) after an alarm warning of a rapid decrease

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in the number of neutrons, according to the Nuclear Regulatory Authority (NRA). But the NRA said in a statement that the "reactor is cooling normally" and "there is no impact on the surrounding environment", as no abnormalities in radioactive levels were detected.

Operator Kansai Electric Power Co said in a statement it was still investigating the cause.

The reactor at the Takahama power plant in central Fukui region halted at around 3:20 pm (0620 GMT) after an alarm warning of a rapid decrease in the number of neutrons, according to the Nuclear Regulatory Authority (NRA). But the NRA said in a statement that the "reactor is cooling normally" and "there is no impact on the surrounding environment", as no abnormalities in radioactive levels were detected.

Fukui regional officials also said it was unclear what had caused the alarm to go off, according to public broadcaster NHK, though they noted there were no abnormalities in reactor temperature or pressure.

The reactor, one of four at the Takahama plant, only restarted operations late last year after routine inspections. There are 33 reactors in Japan, but fewer

than a third are back in action more than a decade after a deadly tsunami in March 2011 caused a meltdown at the Fukushima nuclear plant. Not all are operational year-round, and the country is heavily dependent on imported fossil fuels. With Japan facing its most severe energy crisis in decades, Prime Minister Fumio Kishida said in August that the country should consider building next-generation nuclear reactors.

Source: <https://www.ndtv.com/world-news/japan-nuclear-power-plant-shut-down-automatically-no-radiation-rise-seen-3737060>, 30 January 2023.

UKRAINE

IAEA Ukraine Mission Aims to Help Safety and Security

IAEA experts are being permanently stationed at Ukraine's nuclear power plants, and Chernobyl, "to provide assistance in nuclear safety and security" as the Russia-Ukraine war continues. Director General Rafael Mariano Grossi travelled to Ukraine with the IAEA team, tweeting that the organisation was expanding its presence in the country "to help prevent a nuclear accident during the ongoing conflict. I'm proud to lead this mission to Ukraine, where we're deploying in all of the country's NPPs to provide assistance in nuclear safety and security". Grossi is heading to the South Ukraine and Rivne nuclear power plants, as well as Chernobyl, to establish the permanent missions of two IAEA experts at each site.

A two-person team will also be stationed at the Khmelnytsky nuclear power plant, while the IAEA already has four experts stationed at Ukraine's largest nuclear power plant - Zaporizhzhia - which has been under the control of the Russian military since early March. Speaking ahead of the trip, Grossi said: "This is an important step in our work to help Ukraine during these immensely difficult and challenging times. Our nuclear safety and security experts will monitor the situation at the plants, assess their equipment and other needs, provide technical support and advice, and report their findings to

IAEA headquarters." The presence of the experts at the nuclear power plants was requested by Ukraine and builds on short-term visits during the conflict. Having experts stationed at Zaporizhzhia has already been credited with providing direct reporting of the situation on the ground, as well

being able to assist and advise as required and their presence has been perceived as being a deterrent.

Meanwhile, Grossi continues his long-running efforts to establish a safety and security zone around the six-reactor Zaporizhzhia plant, which is on the front line of the war. He is expected to meet senior Ukrainian government

officials during his visit, and he has said he hopes to visit Russia again for further talks in the coming weeks. ...The plant's six reactors are in shutdown but still need electricity for reactor cooling and

other essential nuclear safety and security functions. It has had to rely on emergency diesel generators on a number of occasions during the conflict and, Grossi said, he continued to have concerns about the pressures on the Ukrainian staff at the plant under the control of the Russian military saying that reduced staffing levels

"combined with psychological stress due to the on-going military conflict and the absence of family members who fled the area have created an unprecedented situation that no nuclear power plant staff should have to endure". Staff at Zaporizhzhia are also continuing to be urged to sign contracts with the Russian state company Rosatom at the site, while the national Ukrainian operator Energoatom is urging them not to do so, the IAEA said, adding that their inspectors at the

IAEA experts are being permanently stationed at Ukraine's nuclear power plants, and Chernobyl, "to provide assistance in nuclear safety and security" as the Russia-Ukraine war continues. Director General Rafael Mariano Grossi travelled to Ukraine with the IAEA team, tweeting that the organisation was expanding its presence in the country "to help prevent a nuclear accident during the ongoing conflict.

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plant have nonetheless reported that “despite all the challenges, the plant still has adequate operational staff to maintain the safe operation of all units at the plant’s current level of functioning”.

Source: <https://www.world-nuclear-news.org/Articles/IAEA-Ukraine-mission-aims-to-help-safety-and-secur>, 16 January 2023.

USA–JAPAN

US, Japan Work Together on Fast Reactor Fuel Safety

A research programme into the safety of fast reactor fuel that has been suspended since the 1990s will resume with tests due to begin at Idaho National Laboratory (INL) next month. Researchers at INL have developed a special capsule to house the experiments, which will use the lab’s Transient Reactor Test (TREAT) facility to mimic the conditions of fast reactors during postulated accident conditions. Repurposed fresh legacy fuel pins from INL’s former EBR-II reactor - which ceased operations in 1994 - was used for experimental commissioning tests. The researchers will now move on to transient experiments on high-burnup materials archived from historic irradiation testing in EBR-II, including tests on mixed oxide fuel used by Japanese and French fast reactor designs, and metallic alloy fuel used by the USA.

The experiments are part of a four-year cost-shared facility sharing initiative between the US Department of Energy (DOE) and Japan Atomic Energy Agency (JAEA) under the bilateral Civil Nuclear Energy Research and Development Working Group, which was established in 2014. But they also represent the completion of work to test high-burnup fast reactor fuels which began in the late 1980s and came to a stop in 1994, when EBR-II operated for the last time. Work is now underway to load the first of four irradiated fuel

experiments into TREAT, with the first transient test expected to start in February. The first three DOE/JAEA fuel experiments are expected to be completed “by early spring”, with the US testing completed before the end of 2024.

During 30 years of operations beginning in 1964, EBR-II – a 62.5 MWth, 20 MWe liquid-sodium cooled, fast breeder reactor - was used to test fuels and materials as well as being a demonstration fast reactor. It has now been decommissioned, although its iconic dome containment structure remains. TREAT is one of only a few facilities in the world that is capable of producing bursts of energy that are several times more powerful than conditions found in a commercial reactor, known as transients, which can be used to study fuel performance under extreme conditions. TREAT was placed on standby the same year that EBR-II closed, but was brought back into operation in 2017. Daniel Wachs, national technical director for the US Advanced Fuels Campaign,

said the unique experiments are represent an important step towards developing global confidence in the enhanced performance and safety of advanced nuclear reactor technologies. “It’s also a remarkable example of how critical international collaborations will enable the next generation of energy technology development,” he added.

Source: <https://www.world-nuclear-news.org/Articles/US,-Japan-work-together-on-fast-reactor-fuel-safet>, 17 January 2023.

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NUCLEAR PROLIFERATION

IRAN

Iran not Ruling Out Withdrawing from NPT

If the Europeans do not change their anti-Iran positions, Iran will possibly withdraw from the NPT as a countermeasure, the Iranian Foreign Minister said, *Mehr* reported. Reacting to a recent move

by the European Union to designate the Islamic Revolution Guards Corps (IRGC) as a "terrorist" entity, Hossein Amirabdollahian told reporters, "[Iranian] Parliament's measure that binds the government to designate the armies of the European countries as terrorist is a countermeasure."

Referring to his conversations with EU Foreign Policy Chief Josep Borrell, Amirabdollahian said that the aforesaid resolution is not binding and it's just an expression of the feelings of a part of the European Parliament representatives. Answering a question about whether withdrawal from the NPT would be one of Iran's countermeasures, Amirabdollahian said, "A small number of European political leaders, including the German Foreign Minister, have no experience in the field of diplomacy." Therefore, if they do not move in the direction of rationality and do not correct their positions, any measure is possible, he noted

Source: <https://news.am/eng/news/740794.html>, 22 January 2023.

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Talks between Moscow and Washington on resuming inspections under the New START nuclear arms reduction treaty were due to take place in November in Egypt, but Russia postponed them and neither side has set a new date for a meeting. Sergei Ryabkov, the deputy foreign minister, said the conditions were not right for new talks on the treaty, which caps the number of each side's strategic nuclear warheads.

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...
Already poor U.S.-Russia ties became even more strained last year when Russia invaded Ukraine, prompting Washington and its allies to respond with a barrage of sanctions against Russia's economy. While there have been occasional diplomatic successes, including prisoner swaps involving U.S. Marine veteran Trevor Reed and basketball star Brittney Griner, direct high-level contact has been scarce. Moscow said in November that it had "no other choice" but to cancel talks with the United States over inspections under the New START treaty, which is set to expire in February 2026.

Source: <https://www.ndtv.com/world-news/russia-says-no-date-set-for-talks-with-u-s-on-nuclear-arms-treaty-3716163>, 23 January 2023.

NUCLEAR DISARMAMENT

USA-RUSSIA

No Date Set for Talks Over Nuclear Arms Treaty with US: Russia

Russia said on 23 January that no new date had been set for talks with the United States on the New START nuclear arms treaty, accusing the U.S. of ramping up tensions between the two sides. Talks between Moscow and Washington on resuming inspections under the New START

URANIUM PRODUCTION

BELARUS

TVEL Supplies Fuel to Belarusian Nuclear Plant

TVEL delivered nuclear fuel produced by Novosibirsk Chemical Concentrates Plant to the Belarusian nuclear power plant at Ostrovets in accordance with a bilateral contract agreed in 2017 - deliveries of nuclear fuel for the initial loading and the first refueling for each unit were included in the general construction contract.

TVEL, part of Rosatom, said that the VVER-1200 reactors have a four-year fuel cycle with one refueling every 12 months during scheduled maintenance. The company said that the long-term contract allows for future innovations to be offered to the Belarusian plant, with Rosatom specialists “already working on the transfer of all Russian VVER-1200 reactors to an extended 18-month fuel cycle with other work being done to create innovative types of fuel for VVER reactors based on new materials and solutions are being worked out in the field of a closed and balanced nuclear fuel cycle”.

The Ostrovets plant consists of two VVER-1200 reactors with a total capacity of 2400 MWe. Rosatom describes the VVER-1200 design, of which the Ostrovets unit is the first to be built outside Russia, as “the backbone” of its export portfolio that comprises 36 units across 12 markets. Unit 1 was connected to the grid in November 2020 and the second unit is targeting start-up in the first quarter of this year.

Source: <https://www.world-nuclear-news.org/Articles/TVEL-supplies-fuel-to-Belarusian-nuclear-power-pla>, 18 January 2023.

CANADA

Candu Fuel Plant Relicensed to 2043

The Canadian Nuclear Safety Commission (CNSC)’s authorisation of the 20-year renewal of Cameco Fuel Manufacturing’s (CFM) operating licence for the facility at Port Hope in Ontario also includes an increase to the plant’s annual production limit. CFM is licensed to produce uranium dioxide (UO₂) fuel pellets and nuclear fuel bundles at the plant, where natural UO₂ powder is pressed into pellets, fitted into zirconium tubes and then assembled into fuel bundles. The facility has been in operation since the late 1950s and came into Cameco’s ownership in 2006 through the company’s acquisition of Zircotec Precision Industries Inc. Zircotec was renamed Cameco Fuel Manufacturing Inc. in 2008.

The 20-year licence provides the regulatory

certainty needed to enable the facility to safely provide this fuel for the next two decades, CFM said. CNSC granted the licence renewal following a public hearing which took place in November. The renewal authorises CFM to possess, transfer, use, process, import, package, transport, manage store and dispose of the nuclear substances that are required for, associated with, or arise from CFM’s activities, and is valid from 1 March 2023 until 28 February 2043, at which point CFM may request another renewal.

The renewed licence also requires CFM to conduct a “comprehensive” mid-way operational performance review by 2033 at the latest, in addition to the regulatory oversight report meeting and compliance verification activities which are carried out annually. As part of the licence renewal, CNSC has also authorised increase of the plant’s annual production limit to 1,650 tonnes of uranium (tU), as UO₂ pellets, which is about 24% higher than the limit in the current licence. The increase aligns with the capacity of the current plant equipment and will mean the facility would be allowed to operate at 100% of its existing capability. CFM said it does not expect to use this capacity in the near future, but the increase in licenced capacity will give it additional capability “to respond to rises in customer demand created by the global and Canadian transition to net zero”.

...The CNSC last year granted a request from Cameco for a one-year licence renewal for the facility - to 28 February this year - to avoid a clash with licensing activities for the company’s Blind River Refinery, which had been scheduled to occur at the same time. The Port Hope facility is located on the traditional territory of the Wendat, Mississauga, Haudenosaunee, Anishinabek Nation, and the territory covered by the Williams Treaties First Nations.

Source: <https://www.world-nuclear-news.org/Articles/Candu-fuel-plant-relicensed-to-2043>, 19 January 2023.

USA

Company Reveals Plans for New US Uranium Plant

Western Uranium & Vanadium has already acquired a site in Utah and begun work on designing and permitting the facility to process uranium, vanadium and cobalt. The new plant will process feed from Western's restarted Sunday Mine Complex. The announcement comes days after the company said mining operations will restart in early February.

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The mine complex in Colorado was last actively mined during 2007-2009. The new "state-of-the-art mineral processing plant" will be designed and constructed to recover uranium, vanadium and cobalt from ore from Western's mines and that produced by other miners, the company said. Selecting and acquiring the processing site - which requires road, power and water infrastructure - has taken more than a year.

Initially, high-grade ore is to be stockpiled.... Only one conventional uranium mill - Energy Fuels' White Mesa, also in Utah - is currently operational in the USA. Two mills - Shootaring Canyon in Utah and Sweetwater in Wyoming - remain on standby, according to the US Energy Information Administration (EIA).

The selection was also based on the support of local municipal and county officials, it added. The location of the site has not yet been disclosed. The facility will use the "latest processing technology", with advancements including Western's patented kinetic separation process that the company said will result in lower capital and processing costs. Western acquired a 25 year licence for kinetic separation (formerly known as ablation) and related patents through its 2015 purchase of Australian company Black Range. The company has previously estimated that kinetic separation - which results in milling a smaller quantity of more concentrated material - can reduce uranium production costs by 44-53%. ... This is one of the most significant events in the history of our company," Western President and CEO George Glasier said.

Western - formerly Homeland Uranium - holds uranium and vanadium mineral assets in western Colorado and eastern Utah, including its flagship Sunday Mine Complex which comprises five individual mines. Since early 2022 Western has transitioned from employing a mining contractor at the complex to building an in-house mining operation, and earlier this month it announced that the refurbished mines have been reopened and are currently being ventilated with mining operations targeted to restart in early February.

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Source: <https://www.world-nuclear-news.org/Articles/Company-reveals-plans-for-new-US-uranium-plant>, 24 January 2023.

NUCLEAR TERRORISM

UK

Man Arrested on Suspicion of Terror Offence after Heathrow Uranium Nuclear Scare

A man has been arrested on suspicion of a terror offence after traces of uranium were found at Heathrow Airport last month. Scotland Yard confirmed the suspect, in his 60s, was arrested in connection to incident on December 29. Counter

terror-cops had earlier confirmed Met Counter Terrorism Command officers were contacted by Border Force from the airport when a material was found to be contaminated during a "routine screening". The constabulary has reassured that the "extremely small" amount discovered poses "no threat". Police in Cheshire detained the suspect on Saturday (14 Jan) under Section nine of the Terrorism Act and he has been bailed until April. The radioactive material was found in a shipment from Pakistan. ... At the time it was reported to have originated in Pakistan and was bound for Iranians in the UK.

Source: <https://www.mirror.co.uk/news/uk-news/breaking-man-arrested-suspicion-terror-28960671>, 16 January 2023.

NUCLEAR WASTE MANAGEMENT

JAPAN

Japan Moves Closer to Release Contentious Nuclear Waste Dump

Japan on 13 January said the contentious nuclear waste from the Fukushima nuclear plant will be released into the sea in coming spring or summer. The announcement came two years after the Japanese government had announced plans to dump the nuclear waste from the crippled nuclear plant despite international criticism against the move. Japan unveiled the plan in April 2021, triggering massive criticism from China, South Korea, North Korea, the island nation of Taiwan and international bodies including the UN. The US,

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however, has backed the proposal, which came after years of talks on how to get rid of more than 1 million tons of water accumulated at the Fukushima nuclear complex since its meltdown after a massive March 2011 earthquake and tsunami. Local fishing community also opposes the move.

Hirokazu Matsuno, Japanese government chief cabinet secretary, told a meeting in Tokyo: "We would like to thoroughly explain these measures to fishing communities and other relevant parties while

listening to their concerns." A revised plan for the release of the nuclear waste will see local fishermen receiving over \$600 million in funds. Seoul has urged Tokyo to "safely disposed off the water in accordance with international standards from the objective and scientific perspectives." IAEA also conducted safety surveys of the Japanese government's plans. "The IAEA will issue a comprehensive report based on their findings and provide support before, during and after the discharge," Kyodo News reported.

Source: <https://www.aa.com.tr/en/asia-pacific/japan-moves-closer-to-release-contentious-nuclear-waste-dump/2787336>, 14 January 2023.

Japan unveiled the plan in April 2021, triggering massive criticism from China, South Korea, North Korea, the island nation of Taiwan and international bodies including the UN. The US, however, has backed the proposal, which came after years of talks on how to get rid of more than 1 million tons of water accumulated at the Fukushima nuclear complex since its meltdown after a massive March 2011 earthquake and tsunami.

FRANCE

French Nuclear Waste Agency Applies for New Storage Site

France's national agency for managing nuclear waste has applied to the ministry of ecological transition for the creation of a project for the long-term storage of high-level radioactive waste, the agency said. The application, which was filed, represents a new phase in which French authorities will examine the plan for safety to ensure it guards against

radioactive leaks. The project, called Cigéo, calls for the waste to be stored 500 metres below ground in the Callovo-Oxfordian clay formation in eastern France. Currently the waste is temporarily stored on the surface, the agency said. Construction could begin as soon as 2027 if the French nuclear safety authority approves the application.

Authorisation for an industrial pilot phase to store some waste could come from 2035 to 2040, with full operational approval between 2040 and 2050, the agency said. Finland, Sweden, Switzerland, Belgium and the Netherlands are also examining the construction of long-term high-level radioactive waste storage sites.

radioactive waste storage sites. Andra, the nuclear waste treatment agency, said this latest application for the storage site did not include the six new EPR nuclear reactors currently under consideration for construction by French power giant EDF, citing the lack of a final decision to embark on the new build.

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Source: <https://uk.finance.yahoo.com/news/french-nuclear-waste-agency-applies-110408064.html?guccounter=1>, 17 January 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).

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