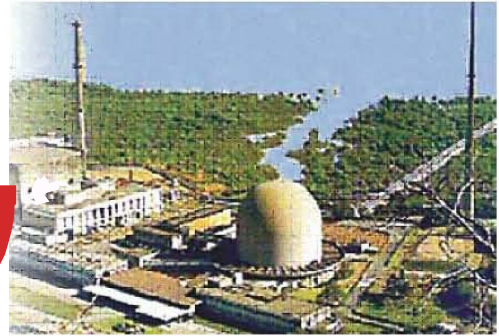


NUCLEAR SECURITY



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

OPINION – William Alberque

Vol 17, No. 10, 15 MARCH 2023

Putin's New START Exit does not Increase Nuclear War Odds

President Putin announced on Feb. 21 that Russia was "suspending" its implementation of the New START Treaty in response to U.S. and Western hostility and due to dissatisfaction with U.S. implementation of certain provisions of the treaty. Its suspension has no legitimate basis within the agreement. Russia's reasons for ceasing implementation are spurious and not grounds for noncompliance. And its dissatisfaction in U.S. implementation stems from its own failure to negotiate adequate verification provisions.

My colleague Tim Wright and I have outlined the deeper meaning behind and implications of Russia's decisions for bilateral, Euro-Atlantic and global security. But an entirely unjustified argument has begun to appear in the media that Putin's announcement heralds "a serious escalation that could mean it is preparing to use nuclear weapons in Ukraine."

Putin's announcement does not indicate that Russia is preparing to use nuclear weapons in Ukraine. Putin does make a direct and reciprocal threat to resume nuclear testing if the U.S. does so first, but since this is extremely unlikely (at least while President Biden is in office), we should not expect testing anytime soon.

Putin's announcement does not indicate that Russia is preparing to use nuclear weapons in Ukraine. Putin does make a direct and reciprocal threat to resume nuclear testing if the U.S. does so first, but since this is extremely unlikely (at least while President Biden is in office), we should not expect testing anytime soon.

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Nonetheless, we need to unpack a thing or two. First, Putin is signaling that Russia would like to resume full-scale nuclear testing. Indeed, there are indications that Russia has been conducting very small-scale nuclear tests despite its pledge under the Comprehensive Test Ban Treaty of 1999 to never conduct any tests whatsoever. Fears are warranted that Russia will build new types of warheads for its "novel" nuclear delivery systems, which, if you follow a certain logic, would require nuclear tests to have high confidence in new designs.

Second, even if Russia were to resume nuclear

testing, it would not indicate an escalation related to Ukraine. If Russia wanted to use nuclear weapons in Ukraine, testing prior to use is unnecessary. Russia has all the warheads it needs (and more) should it choose to carry out tactical or theater-level nuclear strikes in Ukraine. Russia also has more than enough capability to perform a non-destructive assay of its warheads to ensure their viability and usability. Skepticism that Russia will use nuclear weapons in Ukraine is not borne from a lack of confidence in the condition of Russian warheads: Most experts know that Russia has the credibility both in terms of systems and a willingness to commit violent acts. Rather, there is no viable use case where Russia would plausibly use nuclear weapons.

And so, point three: No use case exists for nuclear weapons in Russia's war on Ukraine now. As Fabian Hoffmann and I argued in March 2022, and I argued again in October of last year, the costs of Russian nuclear weapons use in Ukraine remain too high, and the benefits are too low to justify their use. In fact, there is more evidence today—based on statements by Indian Prime Minister Modi and Chinese President Xi — that our predictions last year were correct. India and China are loathe to tolerate nuclear escalation in Russia's war on Ukraine. And to forestall the inevitable retort, no, Putin is not irrational. He is rational and predictable. He makes terrible choices, but they are eminently predictable if you are paying attention. Regime preservation is Putin's highest aspiration, and nuclear weapon use in Ukraine is the one way he could guarantee a global coalition that would question his hold on power.

All of this is not to argue that the U.S. and the West should not do more to send deterrence messaging to Moscow. Indeed, it would be wise to continue reminding Russia that nuclear arms use in Ukraine would risk direct U.S. and NATO military involvement in the conflict. Moreover, the

West should engage in more robust diplomacy with India and China and other states in the Global South to build a unified front against Russian nuclear arms use or threats of use against Ukraine.

Some in the Global South have taken a blase attitude toward Russian nuclear threats. We should galvanize them against Russia's irresponsible rhetoric and build a truly global coalition to agree—in more than a strongly worded condemnation in the U.N. General Assembly—that action would be needed in the event of their use. Russia remains very unlikely to use nuclear weapons against Ukraine, regardless of its abandonment of the New START Treaty, its empty nuclear threats and even if it resumes nuclear testing.

Source: <https://aviationweek.com/defense-space/budget-policy-operations/opinion-putins-new-start-exit-does-not-increase-nuclear-war>, March 07, 2023.

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OPINION – Aleks Phillips

The Left's Changing Position on Nuclear Energy

On February 21, Alexandria Ocasio-Cortez, the congresswoman representing New York, visited Japan's Fukushima nuclear power plant, the site of a triple meltdown and arguably one of the world's worst nuclear disasters. She walked out of the radioactive site with the equivalent dosage of two chest x-rays. During the visit, she documented the trip to her 8.6 million Instagram followers, explaining in calm detail what she had experienced and answering their questions.

"After the explosion, Japan's energy sources went from 30-40 percent nuclear to almost none," Ocasio-Cortez said. "The flipside to that is the major drop in nuclear energy production has been made up in increased use of coal and fossil fuels, whose carbon emissions accelerate climate

change.” While she said her intention was to “neither fear monger nor sugarcoat” what happened, noting that nuclear energy is “a very complex, nuanced, and often controversial topic in certain circumstances,” her appraisal of the fuel that provides 19 percent of Americans’ electricity seemed almost warm.

Experts in environmental policy think that may be the case, or at least that it doesn’t reflect the deep skepticism many on the left have historically held towards nuclear power. They suggest it’s one example of a slow softening of the left in the U.S. toward nuclear energy, as the issue of climate change becomes more acute and the younger generation’s priorities take over from the old.

“I think she’s for nuclear; I’m not trying to say she expressed that fully in those Instagram posts,” Mark Nelson, founder of consultancy Radiant Energy and a self-described nuclear power “radical,” told *Newsweek*. While he didn’t know whether Ocasio-Cortez’s recent trip represented a softening of her stance, “what I can say is she took the risk of sharing the words and images that she did with the audience we know she has,” Nelson said.

He noted that she was someone who previously “spoke out as OK with the loss of the most important power plant in her area, Indian Point,” which ceased operations in 2021—something Nelson describes as “a complete disaster for energy security” in New York, and personally told her when they met briefly at the COP26 summit he hoped it would be the last. “There’s some shift here. She’s sounding very pro-nuclear at the moment, in those [posts],” said Roger Karapin, a

professor of environmental policy at the City University of New York.

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However, he added: “She has not really been anti-nuclear. Back in 2019, when she rolled out the Green New Deal, she had some ambivalence and she clarified her position, it was basically open to nuclear—which is really not far from Biden’s position when he ran in 2020.” As “the writing is on the walls that Biden will be the nominee [in 2024] and she’s not going to want to endorse somebody else,” Karapin said, “maybe she’s preparing her base for that a little bit.”

The Problem of Nuclear Waste: Two days after her trip to Fukushima—a visit Nelson depicts as showing “a level of inquisitiveness that you basically never see in people who are against nuclear”—on February 23, responding to a question about France’s expansive nuclear energy system, she noted that France recycles its waste, “increasing the efficiency of their systems and reducing the overall amount of radioactive waste to deal with,” something the U.S. doesn’t currently do.

The U.S. currently stores much of its nuclear waste on-site, owing to a long-term political battle over a disposal site in Yucca Mountain, Nevada. Recycling nuclear waste might appeal to environmentalists concerned about the effects of man-made radioactive material. But for the U.S. to start recycling, it would take a “very dramatic departure” from how its nuclear plants are currently built.

“Recycling is a much more tricky issue than she makes it out to be, which is another sign for me,” Nelson said. “If she’s willing to make a good/bad, very simplistic determination on fuel recycling, and she decides it’s good, that is a stance that would have been seen as perhaps radically pro-nuclear in previous eras.”

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man-made radioactive material. But for the U.S. to start recycling, it would take a “very dramatic departure” from how its nuclear plants are currently built, according to Barry Rabe, a professor of environmental political science at the University of Michigan. “The French system involves reactors that the U.S. generally does not pursue because of concerns about production of weapons-grade nuclear material,” he said.

Lauren Hitt, director of communications for the congresswoman, said the trip to Japan was “part of a congressional delegation designed to strengthen trilateral relations and gather information on a range of topics, including but certainly not limited to nuclear energy. “We don’t have any changes in the Congresswoman’s policy posture re[garding] nuclear to announce as of now,” she said.

How the Left Changed Its

Tune: Whether or not Ocasio-Cortez is changing her tune on atomic energy, there has been a shift more broadly on the left. Democrat and Democrat-leaning Americans have moved from being 59 percent opposed and 38 percent in favor of expanding the country’s nuclear capacity in 2016, to 55 percent opposed and 43 percent in favor, according to surveys by the Pew Research Center. “There’s been a long, slow and partial shift toward grudging acceptance for some or all for nuclear power for people left of center,” Karapin said. “I see this as part of a generational change: the older voters, older activists, for them nuclear power was the key environmental issue back in the 70s,” he adds, noting nuclear disasters in living memory, such as Three Mile Island and Chernobyl in the 1980s. “For younger cohorts, climate change is the number one issue.”

“The center of Democratic politics, especially at the national level, 10-15 years ago was not pro-nuclear,” Nelson said. “John Kerry was an outspoken opponent of nuclear. Now in his job as climate envoy he tells all sorts of groups, ‘nuclear’s important; we have to have it as part

of the clean energy transition.” He believes that this is driven by a recognition that tackling climate change requires moving away from fossil fuels quicker than renewable energy sources can accommodate, but said this is the “minimum view.” “Nuclear is best at providing electricity at the moment,” Nelson said, noting that a key part of Biden’s push towards a green economy is premised on electrifying transit while decarbonizing electricity production.

Nuclear energy, therefore, could serve as a zero-emission bridging fuel between gas and renewables. “There’s this idea that nuclear power is a barrier to building out renewables,” Karapin said. “But I think the other way of looking at it—from a more pragmatic point of view—is that nuclear power is a substitute for the base load capacity provided by natural gas and coal.” But natural gas currently produces more than 38

percent of America’s electricity, official figures show, with wind and solar power combined producing just 12 percent. “That’s a huge, huge transition,” Rabe said, adding: “So I think in a lot of ways that does raise the issue of nuclear.”

Will Nuclear Fission Fizzle Out? While all three experts note that nuclear power lacks the intermittency issues of wind and solar, Rabe remains skeptical as to whether it alone could plug the gap gas and coal would leave. “I’m just looking at the numbers: you would need to triple existing nuclear capacity to replace gas and maintain existing nuclear [production],” he said. “That would be a massive, massive build-out.”

Rabe also remains unsure about its potential as a bridging fuel, which he says would still require increasing production. “The timelines for that are significant,” he said. “I can’t imagine you can start building major nuclear power plants quickly to serve as a bridge or transition role.” If nuclear power can’t meet America’s future electricity needs, it will need to solve the issue of intermittency of wind and solar power to go net

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“Honestly, I don’t think the U.S. is going to get there by 2050; I think we’re really looking at 2060 or 2070,” he added, but he believes creating a means of storing renewable energy on a large scale would make hitting America’s net zero target possible. “The nuclear fission industry is a declining industry, and the question is just how rapidly it is going to decline,” Karapin said. “It’s a bridge fuel like natural gas; it doesn’t have a long-term future in terms of expansion. It might have a long-term future in terms of phasing out slowly; that might be true for natural gas too.”

As such, the left might be coming to terms with nuclear energy at the same time it’s going out of date, rather than it playing a starring role in America’s green energy revolution. But, as Nelson suggests, it may also be a tacit acceptance that skepticism

towards nuclear power is waning, and that the alternatives face their own steep hurdles.

Source: <https://www.newsweek.com/alexandria-ocasio-cortez-left-nuclear-energy-net-zero-1785162>, March 03, 2023.

OPINION – Håvard Halland, Jessica Lovering

Developing Banks Must Embrace Nuclear Energy

Multilateral development banks (MDBs) have historically been reluctant to invest in nuclear energy, and the World Bank has not financed a nuclear power plant since 1959. In the absence of MDB funds, the majority of international

financing for such projects has come from state banks in Russia and China, establishing Russian and Chinese companies as the primary suppliers of nuclear technology to low- and middle-income countries.

Multilateral development banks (MDBs) have historically been reluctant to invest in nuclear energy, and the World Bank has not financed a nuclear power plant since 1959. In the absence of MDB funds, the majority of international financing for such projects has come from state banks in Russia and China, establishing Russian and Chinese companies as the primary suppliers of nuclear technology to low- and middle-income countries.

While this approach has allowed MDBs to avoid controversy, they must acknowledge that the world has changed. The urgent need to curb greenhouse-gas emissions, together with Russia’s war in Ukraine and subsequent surge in oil and gas prices, has increased global demand for nuclear power. With the 2011 Fukushima disaster

fading in the rearview mirror, even Japan is planning to restart its reactors. France, the Netherlands, and the United Kingdom have all

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In the US, the federal government is expected to pump about \$40 billion into the sector over

the coming decade, and private investment in nuclear energy is surging. This change in sentiment coincides with rapid technological advances. The development of smaller and safer reactors has made nuclear power cheaper, faster to deploy, and easier to maintain. Whereas the construction of traditional nuclear power plants has historically been a major national undertaking, with costs frequently running into the dozens of billions of dollars, so-called small modular reactors allow for a more tailored approach and more manageable financing packages.

This is particularly important for developing countries, which must figure out how to expand their power supply while curtailing greenhouse-

gas emissions as they become increasingly industrialised and urbanised. The IEA estimates that demand for energy in Africa will jump by one-third by the end of the decade, owing to population and income growth, as well as improved access.

While increased MDB support for renewable energy has helped put developing economies on the path toward carbon neutrality, most countries still rely on coal-fired power plants and natural gas for baseload electricity production. To complete the shift away from fossil fuels, governments must complement wind and solar energy with low-carbon sources that are not dependent on weather conditions. But without nuclear power (or hydroelectricity, but not all countries have that option), governments will find it difficult to replace their fossil-fuel baseload. While it may be possible to achieve this by combining renewable energy with utility-scale battery storage, the costs are prohibitive, and modern batteries come with their own sustainability issues.

Geothermal energy could also play this role, but currently it is limited to areas where geothermal heat is available close to the Earth's surface. New technologies could expand access to geothermal power, but they are costly. By abandoning their reticence about nuclear power, MDBs could help scale up low-carbon energy supply while enhancing global security. Western countries' withdrawal from nuclear energy over the past few decades has enabled Russia to establish itself as the leading international provider of reactors, services, and financing for nuclear-power projects.

At a time of heightened geopolitical tensions, it is in the interest of MDBs' democratic shareholding governments to establish an alternative for emerging countries interested in

nuclear power but hesitant to make their energy security dependent on Russia. Simultaneously, MDBs would promote better safety and sustainability standards.

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Given that international development agencies tend to follow MDBs' lead, and that private financing of energy infrastructure projects in developing countries often depends on multilateral lenders' risk-mitigation policies, MDBs should reverse their position on nuclear power. Otherwise, Russia and China will remain the world's primary suppliers of such projects. To be sure, MDBs must carefully assess proposed nuclear energy projects to ensure that they meet appropriate technological and sustainability standards.

MDBs should reverse their position on nuclear power. Otherwise, Russia and China will remain the world's primary suppliers of such projects. To be sure, MDBs must carefully assess proposed nuclear energy projects to ensure that they meet appropriate technological and sustainability standards. While some under-resourced countries with weak institutions might not be ready to pursue nuclear power, MDBs are uniquely positioned to support emerging economies

seeking alternatives to Russian and Chinese technologies and financing.

The climate crisis, too, has created unprecedented momentum for reform. The US, Germany, a G20 expert panel, and Barbadian Prime Minister Mottley have all called for strengthening MDBs' capacity to support developing countries in mitigating and adapting to climate change and in mobilising private financing for this purpose. Meanwhile, the World Bank recently published an "evolution roadmap" that aims to increase its capacity to respond to climate change. Reforming MDBs' financing structures and energy policies is crucial to supporting developing countries in mitigating the worst effects of climate change. Moreover, Russia's war against Ukraine has revealed the critical role of the multilateral financial system as a bulwark against tyranny.

Since the start of the war, the World Bank has disbursed \$16 billion in financial support to

Ukraine, with other multilateral finance institutions providing comparable amounts. By explicitly permitting MDBs to finance nuclear power, their shareholding governments could weaken Russia's still-considerable influence in emerging countries.

The momentum generated by nuclear energy's renaissance, the geostrategic imperative to reduce Russia's role as the dominant international provider of nuclear energy infrastructure, and the looming climate crisis, has presented MDBs with a unique opportunity to update their nuclear energy policy. To fight climate change and achieve a safer, more sustainable future, they must seize it.

Source: <https://www.eco-business.com/opinion/development-banks-must-embrace-nuclear-energy/>, March 01, 2023.

OPINION – Allison Macfarlane, Rodney C. Ewing

Nuclear Waste is Piling Up. Does the U.S. have a Plan?

As small modular nuclear reactors come closer to reality in the U.S., managing and disposing of their highly radioactive waste should be a national priority. Forty years after the passage of the Nuclear Waste Policy Act, there is, "no clear path forward for the siting, licensing, and construction of a geologic repository" for nuclear waste, according to a recent U.S. National Academies of Science, Engineering and Medicine report. The good news is that there is already a clear strategy for managing and disposing of this highly radioactive material. The bad news is that the U.S. government has yet to seriously follow that plan.

The National Academies report tells us that new or advanced reactor designs—the hoped-for saviors of the nuclear industry—will not save

us from the need to build geologic repositories, deep-mined facilities for permanent nuclear waste disposal. In some cases, these new reactors may make it worse by creating more waste that's more costly to manage, new kinds of complex waste, or

just more waste, period. Before we face that onrush, we first need to deal with the large volume of waste we've already produced.

The U.S., which led the way on managing nuclear waste in the 1980s and 1990s, has now fallen to the back of the pack. About 88,000 metric tons of spent nuclear fuel from commercial reactors remain stranded at reactor sites, and this number is increasing by some 2,000 metric tons each year. These 77 sites are in 35 states and threaten to become de facto permanent disposal

facilities. Without a geologic repository, there is no way forward for the final disposal of this highly radioactive material. Storing it in pools and dry casks at reactor sites is a temporary solution; it is safe for decades, but not the millennia needed to isolate this radioactive material from the environment. The present U.S. policy of indefinite storage at a centralized site is not a viable solution, as it shifts the cost and risk to future generations.

Beginning now, the nation needs to follow a pathway already set out for a national nuclear waste repository. Both a 2012 presidential Blue Ribbon Commission and an international expert panel organized by Stanford and George Washington Universities in 2018 recommended a new, independent, waste management and disposal organization with funding outside of the annual Congressional appropriations and restrictive budgetary rules. The Blue Ribbon Commission called for creation of a new federal corporation, like the Tennessee Valley Authority, for this organization, while the Stanford/GWU

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panel looked to replicate not-for-profit, utility-owned, but independent, organizations modeled on successful programs in other countries, such as Sweden and Finland. Charges to nuclear-power-produced electricity fund these organizations, and they remain regulated by independent nuclear regulators. Both panels agreed on the need for an independent organization and finances.

Nations that followed this blueprint are now addressing their nuclear waste problem.

Sweden's SKB nonprofit announced last year that it will build a deep geologic repository at Östhammar for the permanent disposal of spent fuel from its commercial nuclear reactors. In Finland, construction of a geologic repository began in May 2021, with plans to accept spent nuclear fuel by the mid-2020s. The Nordic countries are not the only ones making progress: France, Canada and Switzerland are all pushing toward license applications to begin construction.

A U.S. waste management organization must be a trusted and capable agency that is well-funded and staffed. Sweden's SKB sustained decades of effort on both public engagement and technical analysis around siting and now is reaping the benefits. The U.S. Department of Energy, the designated repository implementer established by the Nuclear Waste Policy Act, instead suffers from leadership and priorities that change with each administration, as well as a history of broken promises that have led to little public confidence that it is up to the job. The overwhelming majority of successful repository programs overseas are run by independent corporations established by the nuclear industry—outside government. The industry is best positioned to manage the back end of the nuclear fuel cycle, from discharge of spent fuel from the reactor, through storage, shipment and final geologic disposal.

Consent from people living nearby is another universal requirement to establish an accepted

geologic repository. Different motivations will underpin a community, tribe or state's decision to host one. A municipality may volunteer because of the jobs that will last over the long life of the project

(probably over 100 years) or improvements in roads, schools or other infrastructure. Some may feel the need to contribute to the greater good of society, especially if they benefited from the electricity produced by nuclear power, as is the case in Sweden. The 2012 Blue Ribbon Commission suggested that

The Blue Ribbon Commission called for creation of a new federal corporation, like the Tennessee Valley Authority, for this organization, while the Stanford/GWU panel looked to replicate not-for-profit, utility-owned, but independent, organizations modeled on successful programs in other countries, such as Sweden and Finland.

communities should decide for themselves what consent looks like to ensure a successful repository decision. Indeed, Canada is following this approach. The two finalist communities in its siting process will handle the decision differently, one by referendum, the other by elected council decision.

Affected communities will need resources to hire their own experts to validate claims made by the designated nuclear waste management agency. Sweden, in fact, not only provided such funds, but also money for public interest groups that opposed the repository, as part of the effort to produce a compelling safety case for Östhammar. Assured finances are also key. In the U.S., Congress hasn't appropriated funds for its Yucca Mountain nuclear waste program since 2010. In fact, Congress has so badly mangled the process of collecting and appropriating the ratepayers fund, now over \$40 billion, that it has rendered these funds essentially inaccessible. Outrageously, this money, actually collected from electricity ratepayers, not taxpayers, is being used to offset the national debt.

Even if the U.S. starts today, it will take decades to site, design and build a facility for disposal of its nuclear waste stockpile. That process must accelerate now, before the reactors we need for their electricity run out of room for their growing inventories of highly radioactive waste.

Source: <https://www.scientificamerican.com/article/nuclear-waste-is-piling-up-does-the-u-s-have-a-plan/>, March 06, 2023.

NUCLEAR STRATEGY

INDIA-CHINA

Very Valuable that Modi, Xi Opposed Nuclear Weapons: CIA Chief

It has been “very valuable” that Prime Minister Modi and China’s president Xi have made clear their opposition to nuclear weapons, Central Intelligence Agency chief Bill Burns has said. His comments, in the context of persuading Russia to refrain from the use of nukes, come two days after US secretary of state Antony Blinken said he had asked India and China to speak to Russia to express their opposition to nuclear weapons.

In an interview with CBS News, when asked about his meeting with Russian foreign intelligence chief Sergei Naryshkin in Turkey last year, Burns said the conversation was “dispiriting”. “My goal was not to talk about negotiations.

That’s something that Ukrainians are going to need to take up with the Russians when they see fit. It was more than anything else, what the President (Biden) asked me to do, which was to make clear to Naryshkin and through him to President Putin, the serious consequences should Russia ever choose to use a nuclear weapon of any kind as well.”

Burns said that Naryshkin understood the seriousness of that issue and so did Putin. “I think it’s also been very valuable that the Chinese leadership and Prime Minister Modi in India have also made clear their opposition to any use of nuclear weapons.” When asked why he found the conversation dispiriting, Burns, who also served as the American ambassador to Russia, said that he got the sense that Putin still had a “sense of cockiness and hubris.” “You know, a sense, I think, reflecting Putin’s own view, his own belief today that he can make time work for him, that he

believes he can grind down the Ukrainians, that he can wear down our European allies, that political fatigue will eventually set in.”

Burns, who has extensively dealt with the Russian president, said that in his experience, Putin’s view of Americans was that US had an “attention deficit disorder”. “And we will move on to some other issue eventually. And so Putin, in many ways, I think, believes today that he cannot win for a while, but he can’t afford to lose. I mean, that’s

his conviction. So instead of looking for ways to either back down or find a famous off ramp, you know, what Putin has done is double down.” Putin, Burns said, remained “entirely too confident of his ability” to wear down Ukraine.

Burns also said that China was considering, but had still not decided, on whether to provide lethal supplies to Russia. “We are confident that the Chinese leadership is considering the provision of lethal equipment. We also

don’t see that a final decision has been made yet, and we don’t see evidence of actual shipments of lethal equipment. And that’s why, I think, Secretary Blinken and the President have thought it important to make very clear what the consequences of that would be as well.” Last week, at the Munich Security Conference, Blinken had warned China against providing military support to Russia.

Suggesting that Xi had watched the evolution of the war in Ukraine closely, Burns said, “And I think in many ways, he’s been unsettled and sobered by what he’s seen. I think he was surprised by the very poor military performance of the Russians. I think surprised also by the degree of Western solidarity and support of Ukraine. In other words, the willingness of not just the US, but our European allies as well to absorb a certain amount of economic cost in the interest of inflicting greater economic damage on Russia over time. So all of

It was more than anything else, what the President (Biden) asked me to do, which was to make clear to Naryshkin and through him to President Putin, the serious consequences should Russia ever choose to use a nuclear weapon of any kind as well.” Burns said that Naryshkin understood the seriousness of that issue and so did Putin. “I think it’s also been very valuable that the Chinese leadership and Prime Minister Modi in India have also made clear their opposition to any use of nuclear weapons.

that, I think, has sobered Xi Jinping to some extent."

Source: <https://www.hindustantimes.com/india-news/very-valuable-that-modi-xi-opposed-nuclear-weapons-cia-chief-101677528855340.html>, February 28, 2023.

RUSSIA

Russia Unveils New Nuclear Strategy

Moscow is developing a new military strategy in which nuclear weapons will be used to protect Russia against possible aggression from the US, according to a Russian Ministry of Defense journal. The article published in the magazine *Voennaya Mysl (Military Thought)* follows a series of incendiary remarks from Russian political figures about the prospect of Russia using nuclear weapons.

Guests and anchors on Russian state television have also boasted about Moscow's nuclear capabilities and called for strikes on western countries backing Ukraine in the war against Russian aggression. Adding to the discourse is the defense journal article, which said that the U.S. was concerned it was losing dominance over the world and so had prepared plans to strike Russia to neutralize it. Part of the strategy involved the Pentagon trying to "defeat" up to 70 percent of Russia's strategic nuclear forces "using a conventional instant global strike," according to the article, Russian state news agency RIA Novosti reported.

Russian military experts are looking to counter what they say is U.S. aggression by operating Russia's "strategic deterrence forces." Defeating the "American aggressor" would entail "modern strategic offensive and defensive, nuclear and non-nuclear weapons, taking into account the latest military technologies," said the article written by a deputy commander of Russia's

strategic missile forces and a retired colonel. This would show Washington it could not cripple Russia's nuclear missile system and would not be able to fend off a retaliatory strike.

Last month, Russian President Putin announced that Russia would suspend the New START treaty, the final remaining nuclear arms control agreement with the U.S., saying that he wants to re-evaluate what NATO allies have in their nuclear arsenal. In reference to his invasion of Ukraine, Putin said that the West wanted "to inflict a 'strategic defeat' on us and try to get to our nuclear facilities at the same time." The New START treaty limited Russia and the U.S. to no more than 1,550 deployed nuclear warheads and 700 deployed missiles and bombers. It was signed in 2010 by former President Obama and his Russian counterpart at the time, Medvedev.

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Now as the deputy chairman of Russia's Security Council, Medvedev has ramped up

nuclear threats in inflammatory posts on his Telegram social media channels. In an op-ed for the newspaper *Izvestia*, he again took aim at the West's support for Ukraine and that its continued supply of weapons to Kyiv would mean that "everyone loses." In a nod to what might follow a nuclear war, he wrote that "life that existed before" will be forgotten until "smoky debris ceases to emit radiation."

Source: <https://www.newsweek.com/russia-new-nuclear-strategy-ukraine-war-1785052>, March 02, 2023.

SOUTH KOREA

South Korea Doesn't Need Nuclear Weapons to Face the North, Prime Minister Says

South Korea doesn't need nuclear arms to deter the threat from North Korea, the country's Prime Minister Duck-soo said in an exclusive interview

with CNN – even as public opinion swings the other way amid Asia's accelerating arms race. Several recent public surveys “definitely showed that we should re-arm ourselves. In nuclear capability terms, (the surveys say) we should go farther,” Han told CNN anchor and business editor-at-large Richard Quest during a sit-down in Seoul.

One such poll, released last February, found that 71% of more than 1,300 respondents in the country were in favor of South Korea developing its own nuclear weapons – a once-unthinkable idea that has become increasingly mainstream in the past decade, with rising tensions in the Korean Peninsula and dwindling confidence in South Korea toward US protection. However, Han insisted the country has enough in its arsenal to stave off North Korea's “preposterous ambitions” – and that developing nuclear capabilities was not “the right way.”

...Relations between North and South Korea have worsened in recent years as Pyongyang ramped up its weapons program, firing a record number of missiles last year – including one that flew over Japan, the first time North Korea had done so in five years, prompting international alarm. And for months, the US and international observers have warned that North Korea appears to be preparing for its first underground nuclear test since 2017. The country's dictator Kim Jong Un also intensified his rhetoric last year; he declared his intention to build the “world's most powerful” nuclear force, warned adversaries that North Korea was fully prepared for “actual war,” vowed to “never give up” nuclear weapons and dismissed the possibility of negotiating denuclearization.

In response, the US and its allies South Korea

and Japan have stepped up their own military drills and cooperation. Yoon, who has publicly taken a tough stance against North Korea, even raised the prospect of South Korea building its own nuclear arsenal, saying in January it could “deploy tactical nuclear weapons or possess its own nukes.”

And despite Han voicing opposition to such a plan, he too emphasized South Korea's preparedness in confronting its nuclear-armed neighbor – as well as its openness for further talks, under certain conditions. “We are not disarming ourselves against North Korea,” he said. “But we are not closing the dialogue channel with North Korea ... as long as North Korea

is abstaining from their very strong nuclear ambitions.”

Source: <https://edition.cnn.com/2023/03/03/asia/south-korea-prime-minister-han-duck-soo-intl-hnk/index.html>, March 05, 2023.

NUCLEAR ENERGY

BULGARIA

Decarbonization, Energy Security Impossible without Nuclear Energy - Hristov

Bulgaria is one of the 10 EU member states that supported France in the initiative to form a pro-nuclear bloc. “The simultaneous achievement of full decarbonization and energy security is impossible without nuclear power,” Hristov said in Zagreb, Croatia, at the Fourth Ministerial Meeting of the Partnership for Transatlantic Energy and Climate Cooperation (P-TECC) within the Three Seas Initiative, BTA reported.

Bulgaria has been operating a nuclear power plant for more than 40 years and intends to continue to utilize the technology. It plans to add nuclear

facilities over the next 30 years. According to Hristov, the decision to continue using nuclear energy is based on the need to cover future consumption and achieve decarbonization targets and energy security. Many countries import electricity from Bulgaria, the main exporter in its region, so the country must be responsible, Hristov said.

He expressed the opinion that nuclear energy and renewable energy are complementary, not competing technologies. The minister stressed regional cooperation as one of the main goals of its ministry. He noted that Bulgaria has invested in a liquefied natural gas (LNG) terminal in Greece and signed an agreement to use Turkey's gas infrastructure. The moves enabled the country to receive LNG from producers from across the globe and deliver gas to neighboring countries. The security of energy supply implies working at the regional level, not only at the national level, Hristov stressed.

Source: <https://balkangreenenergynews.com/decarbonization-energy-security-impossible-without-nuclear-energy-hristov/>, March 03, 2023.

Survey: 66% of Bulgarians Support Nuclear Energy

The development of nuclear energy is actively followed by a smaller share of the population. 38% percent of the respondents find the topic extremely important and get informed when they come across information related to it. These are more often men between the ages of 30 and 69, with higher education and living in larger cities. 18% of people are not actively interested in the development of nuclear energy.

This was stated by the sociologist and co-founder

of "Trend" Evelina Slavkova in connection with the results of a survey by the sociological agency regarding the attitudes towards the development of nuclear energy in Bulgaria. "84% of Bulgarians indicates that they are informed by the media on the subject of nuclear energy development",

noted Slavkova. 28% of the Bulgarian society fully supports the development of nuclear energy, and 38% rather supports it. Only 7% rather do not support the development of nuclear energy, and 3% do not support it at all. 24% of the respondents indicated that they do not know or cannot assess whether we should develop nuclear energy in the country. For 55%, the safety of nuclear technologies is most important. Among

other important factors: 15% cite reliability; 15% – the price; 4% – environmental friendliness. 10% cannot judge or do not know. As the greatest benefit for society from the development of nuclear energy, 61% answered that it was the guarantee of energy security in normal and crisis periods. 41% say that it enables Bulgaria to be a leading exporter of electricity in the region, which brings fresh money into the economy.

Regarding the problems in nuclear energy that have not yet been solved, the research of the sociological agency "Trend" shows that 31% of the respondents indicated that the issue of spent nuclear fuel and radioactive waste has not been solved in the long term, and 33% do not know /can't decide. "29% support the increase of nuclear power in our country in the long term," said Evelina Slavkova.

When asked what the role of the state should be in the implementation of new nuclear projects, 39% are categorical that the Bulgarian state should be the sole owner. "The research shows

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that 76% of the Bulgarian public does not know that nuclear plants have the lowest emissions of greenhouse gases and the least consequences on public health, and 21% indicate that they are aware," said the co-founder of "Trend". The survey was conducted in the period February 4-12, 2023, and was conducted by means of a direct standardized face-to-face interview. There are 1,003 of the surveyed persons of legal age.

Iva Petrova, Deputy Minister of Energy, emphasized that the Ministry of Energy has clearly stated its vision for the development of the energy sector. She noted that the ministry's vision is climate neutral. Regarding the results of the research of the sociological agency "Trend", she pointed out: "Undoubtedly, the results should be seen in development - where we were and where we are now. A more detailed breakdown of the demographics of those behind these responses should be seen," said Petrova. The deputy said she was impressed by the high percentage of support for developing our nuclear power, as well as the media being cited as an important source of credible information. "Interesting data that deserves in-depth analysis. Public support is critical because we are still talking about nuclear power," said the Deputy Minister of Energy. "Regarding the renegotiation of the Recovery and Resilience Plan, we are currently working. A dialogue with the EC in this direction should be initiated very soon," she added. The survey by sociological agency "Trend" is nationally representative and examines the level of knowledge and interest in nuclear energy, as well as the attitude towards possible scenarios for ensuring energy independence in the country.

Source: <https://www.novinite.com/articles/219070/Survey%3A+66+of+Bulgarians+Support+Nuclear+Energy>, March 01, 2023.

PHILIPPINES

Creation of Nuclear Energy Office under DOE Pushed

The House Special Committee on Nuclear Energy adopted a resolution calling on the Department of Energy (DOE) to create a Nuclear Energy Division within its organization. During the hearing, the panel, chaired by Pangasinan Representative Mark Cojuangco, adopted House Resolution 387, which is in line with the Marcos administration's push to incorporate nuclear power in the Philippines' energy mix.

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APEC Party-list Rep. Sergio Dagooc, one of the authors of HR 387, said the DOE does not currently have an office dedicated to dealing with nuclear energy-related issues. Dagooc said the new division within DOE should be in-charge of developing the framework of the nation in utilizing and managing nuclear energy in the country. The proposed

division, he said, should also further advance the plans to utilize nuclear energy to combat the rising prices and the lack of supply of electricity in the country. "Seriously exploring nuclear energy as an additional source for the generation of electricity may solve the above cited problems," he said.

He said the DOE should also work with the Philippine Nuclear Research Institute (PNRI) and other concerned government agencies to establish and implement a strategic plan and policies for the utilization of nuclear energy as a source of generating electricity in the country. In his first State of the Nation Address (SONA), President Marcos Jr. said it was "time to re-examine" the country's strategy toward building nuclear power plants in the Philippines. "We must build new power plants. We must take advantage of all the best technology that is now available, especially in the areas of renewable energy," Marcos said.

Source: <https://www.pna.gov.ph/articles/1196864>, March 07, 2023.

RUSSIA

Poland, Ukraine Call for Nuclear Energy Sanctions against Russia

Poland and Ukraine on Thursday (2 March) called for international sanctions against Russia's nuclear energy sector, saying they feared their neighbour may hurt energy security and economies in Europe if attacks on Ukrainian power facilities continue. Last week, the EU adopted the tenth package of sanctions targeting Russia, but did not include its nuclear energy sector because of opposition from some EU member states. "If we want to develop nuclear, ... we need to suspend Russia in IAEA," Anna Moskwa, the Polish climate and environment minister, said at an energy conference in the Croatian capital of Zagreb. "We need to end any nuclear cooperation with Russia, ... and I believe Europe will manage to do so," Moskwa said. "Nuclear sanctions next package - this is our future challenge we need to face no matter how difficult it is."

Russia occupied Ukraine's Zaporizhzhia nuclear power station exactly one year ago after launching its invasion. The plant, Europe's largest with six reactors, remains near the front line, with each side accusing the other of shelling it and risking a nuclear accident. Moskwa said Russia's occupation of Zaporizhzhia is a "very huge danger to our economies, to our society, to our security". "We are neighbouring countries, every day we are analysing what may happen." Since October, Russia has been bombing transmission lines and substations of Ukraine's nuclear plants, leaving millions without power and heating for days in freezing temperatures

during winter months. "We should get rid of Russians in the nuclear sector, in a civilised world they cannot be present as a partner of business," Ukrainian Energy Minister German Galushchenko told the same conference. "They destroy everything, they destroy all seven pillars of nuclear safety and security."

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Ukraine has succeeded in restoring power supplies to its citizens and is now working to rebuild the grid with U.S. partners, taking into account all possible military risks posed by Russia, Galushchenko said at the ministerial meeting of

the Partnership for Transatlantic Energy and Climate Cooperation (P-TECC). Galushchenko said that Ukraine wanted to decentralise the generation of power to make it more difficult for Russians to attack the plants. Russia formally suspended its participation in the New START nuclear arms control treaty, blaming Washington of using it to help Ukraine attack Russian strategic sites.

Source: <https://www.reuters.com/world/europe/poland-ukraine-call-nuclear-energy-sanctions-against-russia-2023-03-02/>, March 02, 2023.

Sri Lanka is to become a party to two major international conventions on nuclear obligations after Cabinet approval was given to consider nuclear energy as an alternative solution to meet Sri Lanka's future energy needs, government Spokesperson Bandula Gunawardena said on 28 February. Addressing a press conference, Gunawardena said a steering committee, and nine action committees, had been appointed to study electricity generation, using nuclear energy.

SRI LANKA

SL to Sign Two International Conventions to Embark on Nuclear Energy to Meet Power Needs

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Cabinet approval was given to consider nuclear energy as an alternative solution to meet Sri Lanka's future energy needs, government Spokesperson Bandula Gunawardena said on 28 February. Addressing a press conference, Gunawardena said a steering committee, and nine

action committees, had been appointed to study electricity generation, using nuclear energy.

The IAEA has recommended that Sri Lanka be part of the Vienna Convention on Civil Liability for Nuclear Damage and Convention on Supplementary Compensation for Nuclear Damage, he said. The Minister went on to say that it was possible to proceed with the nuclear power generation project, in line with IAEA recommendations. Accordingly, the Cabinet of Ministers approved the combined proposal, presented by the Minister of Foreign Affairs and the Minister of Power and Energy, to proceed to become a party to the mentioned conventions, he said. The Minister added that Sri Lanka would seek financial assistance to build nuclear power plants. Earlier, Russia said it was willing to build a nuclear plant in Sri Lanka.

Source: <https://island.lk/sl-to-sign-two-international-conventions-to-embark-on-nuclear-energy-to-meet-power-needs/>, March 02, 2023.

UAE

How UAE Nuclear Energy could Power Future Mission to Mars

The UAE's emerging nuclear energy programme could be used to power future space missions. Nuclear power can blast space rockets further and for longer and the UAE's Barakah plant is looking to the stars for future possibilities. The UAE's Peaceful Nuclear Energy Programme is about more than just clean energy and it can become a catalyst for the nation's era of space exploration for decades to come.

UAE Nuclear Power in Space: *The UAE is ready to make history as it continues to be inspired by the ambitions of the nation's Founding Father, the late*

Sheikh Zayed bin Sultan Al Nahyan. Sultan Al Neyadi will become the second Emirati to take the UAE flag to space, spending 180 days on board the orbiting laboratory of the International Space Station (ISS) alongside crew mates from

Roscosmos and NASA. A seemingly unlinked sector to space exploration is nuclear power's role beyond clean electricity, with the UAE Peaceful Nuclear Energy Programme to become a catalyst for the nation's era of space exploration in the decades ahead.

UAE Mission 2, the longest Arab space mission in history, will significantly contribute to

humanity's understanding of life on and beyond Earth, three years after the Hope Probe. In 2019, the first Emirati astronaut, Hazzaa Al Mansoori, spent eight days on the ISS. The Mohammed Bin Rashid Space Centre in Dubai was responsible for making the UAE a world leader in space services and exploration. While in the UAE's early space exploration years, the nation has already made incredible progress,

becoming the first Arab nation and fifth country ever to reach Mars and the first Arab country to build and launch a Moon rover.

Since 2000, the space station has never been without astronauts on board, and the UAE will rank 11th globally among countries that have successfully achieved a long-duration mission at the ISS. Since 1961, nuclear power has enabled understanding of dark, distant planetary bodies that would otherwise be unreachable, opening up the solar system to human exploration and scientific discovery. Nuclear fuel is incredibly energy-dense, enabling nuclear-powered spacecraft power to travel thousands of

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To date, NASA has flown more than 25 missions carrying a nuclear power system through a successful partnership with the US Department of Energy, which provides the power systems and fuel, with groundbreaking missions extending humanity's reach across the solar system. Radioisotope power systems are reliable and efficient, and NASA uses nuclear systems to power unmanned spacecraft to distant planets with enhanced reliability and efficiency compared to solar energy.

kilometres over the years without refuelling.

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However, a National Academies report concluded that larger systems are needed for human flights to Mars and beyond, or for setting up colonies on the Moon or Mars, even actual nuclear reactors. In this new age of space travel, nuclear power and related technologies are making interplanetary missions faster, more efficient and more economical, with advances in nuclear fission and fusion indispensable for deep-space travel. In the foreseeable future, nuclear energy could supply electricity for a broader spectrum of applications, including onboard systems and instrumentation, powering a sustained human presence on celestial bodies in the solar system.

The US space agency is exploring nuclear thermal propulsion to drive efficiencies. This concept introduces heat from a nuclear fission reactor to a hydrogen propellant and plans to test a spacecraft engine powered by nuclear fission by 2027. A trip to Mars from Earth using the

technology could take roughly four months, instead of some nine months with a conventional, chemically powered engine, and substantially reduces the time astronauts would be exposed to natural deep-space radiation.

The UAE has a long-term, data-driven approach to developing nuclear energy with the Barakah Nuclear Energy Plant, the cornerstone of the UAE Peaceful Nuclear Energy Programme, generating abundant clean electricity around the clock. Spearheading an increase in the intellectual wealth of with thousands of high-value career opportunities for UAE Nationals, the Barakah Nuclear Energy Plant is transforming the human capital of the nuclear sector and stimulating millions of dollars of value for local companies.

the UAE

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The Barakah Plant is just the beginning of the UAE Peaceful Nuclear Energy Programme, with nuclear energy the catalyst for innovation and R&D. With abundant clean electricity flowing 24/7, ENEC focuses on exploring and incubating strategic investments in nuclear energy locally and internationally that support

the growth and development goals of the UAE.

The Barakah Nuclear Energy Plant is a nation-defining strategic energy infrastructure project driving efforts towards achieving UAE's Net Zero by 2050 target by preventing millions of tons of carbon emissions annually. Today, the Barakah Plant is the region's largest source of clean electricity. Among its civil applications, ENEC

plans to realise the full value of the UAE Programme, from clean energy generation and clean molecules production, to applications in healthcare, agriculture and space exploration.

UAE astronauts are continuing Sheikh Zayed's legacy and making a nation proud by turning the ambitions of his wise leadership into reality. It is inspiring and motivating to witness their progress,

share their ambitions, and continue the incredible progress in exploring the universe beyond our world to help make the breakthroughs we need to protect all life on Earth.

Source: <https://www.arabianbusiness.com/industries/energy/how-uae-nuclear-energy-could-power-future-mission-to-mars>, March 01, 2023.

USA

A New Nuclear Reactor in the US Starts Up. It's the First in Nearly Seven Years

For the first time in almost seven years, a new nuclear reactor has started up in the US. Georgia Power announced that the Vogtle nuclear reactor Unit 3 has started a nuclear reaction inside the reactor. Technically, this is called "initial criticality." It's when the nuclear fission process starts splitting atoms and generating heat, Georgia Power said in a written announcement. The heat generated in the nuclear reactor causes water to boil. The resulting steam spins a turbine that's connected to a generator that creates electricity.

Vogtle's Unit 3 reactor will be fully in service in May or June, Georgia Power said. The last time a nuclear reactor reached the same milestone was almost seven years ago in May 2016 when the

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Tennessee Valley Authority started splitting atoms at the Watts Bar Unit 2 reactor in Tennessee, Scott Burnell, a spokesperson for the Nuclear Regulatory Commission, told CNBC.

... Including the newly turned-on Vogtle Unit 3 reactor, there are currently 93 nuclear reactors operating in the US and, collectively, they generate 20% of the electricity in the country. Nuclear reactors, which help

combat global warming, generate about half of the clean, carbon-free electricity generated in the U.S. Most of the nuclear power reactors in the US were constructed between 1970 and 1990, but construction slowed significantly after the accident at Three Mile Island near Middletown, Pennsylvania, on March 28, 1979.

From 1979 through 1988, 67 nuclear reactor construction projects were canceled, according to the U.S. Energy Information Administration.

However, because nuclear energy is generated without releasing carbon

dioxide emissions, which cause global warming, the increased sense of urgency in responding to climate change has given nuclear energy a chance at a renaissance. The cost associated with building nuclear reactors is a major barrier to a potential resurgence in nuclear energy, however. And the new builds at Vogtle have become an epitome of that charge: The construction of the two Vogtle reactors has been plagued by cost overruns and delays.

Source: <https://www.cnbc.com/2023/03/07/a-new-nuclear-reactor-in-the-us-starts-up-for-first-time-in-seven-years.html>, March 07, 2023.

EMERGING TECHNOLOGIES AND DETERRENCE

UK

AI Threatens Human ‘Override’ on Nuclear Weapons Use, Ex-Defence Secretary Warns

A growing reliance on advanced technologies such as artificial intelligence threatens human checks that have in the past “averted potentially catastrophic nuclear weapons use”, a former defence secretary has warned. The “very grave danger” was raised in Parliament by Lord Reid of Cardowan as he pressed the Government for assurances that the increasing use of autonomous digital based systems, including in the military, would not undermine people’s physical “override” over the UK deterrent.

He made his comments as ministers were tackled in the House of Lords about an independent nuclear failsafe review being carried out in the US and whether Britain would follow suit. Defence minister Baroness Goldie told peers: “We have absolute confidence in the safety, security and reliability of the United Kingdom’s nuclear deterrent. “But for the purpose of safeguarding national security we will not provide detailed comment on arrangements for its assurance.” She added: “There are very robust structures within the United Kingdom.”

Lord Reid, who served as defence secretary in the last Labour government, said: “The minister will be aware that on several occasions in the past human override has averted potentially catastrophic nuclear weapons use. “Given the encroaching autonomy of decision-making throughout industry, including in the military, the complexity of the interrelationship between them and the increasing reliance on artificial intelligence, the dangers of averting that by

human override are constantly being eroded. “Will she accept that very grave danger and assure us the highest priority is being given to see that that human override – the decision by human beings – is not being undermined by the complexity and the increasing use of autonomous digital based systems when it comes to nuclear weapons?”

Responding, Lady Goldie said: “We are cognisant, we are certainly not complacent about the swiftly changing nature of threat or for that matter the

swiftly changing and challenging situation of artificial intelligence. “We will ensure that regardless of any use of AI in our strategic systems, human political control of our nuclear weapons is maintained at all times. “We strongly encourage other nuclear states to make a similar commitment.” The minister added: “We have in place an array of safeguards, of checks, of structures to ensure we are responsive to any

identified vulnerability or potential area of risk however that risk might arise.”

Source: https://www.irishnews.com/news/uknews/2023/03/06/news/ai_threatens_human_override_on_nuclear_weapons_use_ex-defence_secretary_warns-3111140/, March 06, 2023.

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NUCLEAR SECURITY

AUSTRALIA

Australia is Home to One of the World’s Best Nuclear Reactors

The Australian Nuclear science and Technology Organisation (ANSTO) has been steadily building Australia’s nuclear expertise over the past 70 years. Today, despite being small in scale, Australia is amongst the world’s most complex and sophisticated nuclear nations. In December

that same year, ANSTO completed the largest coordinated safety and security review of our Open Pool Australian Light-water (OPAL) multi-purpose reactor as part of a new world-leading approach to performance assessment.

The review was one of the first Periodic Safety and Security Reviews of its type in the world. Using an approach designed by the IAEA for assessing the safety of power reactors, it was adopted by ANSTO and covered 15 safety and 19 security factors. This rigorous assessment provides steadfast assurance of the ongoing operations and reliability of the OPAL multi-purpose reactor. After 15 years of operation, this review confirms that OPAL is one of the safest and most reliable reactors in the world today.

'Nuclear stewardship' is a phrase used in the nuclear community. At ANSTO, it refers to the responsible planning, operation, application, management and leadership of nuclear facilities and technologies to ensure that the highest levels of safety, security, safeguards and sustainability are achieved to maximise utilisation, benefit and assurance for the Australian people. Effective nuclear stewardship is attained by an array of underpinning and cross-cutting functions spanning safety, security and safeguards enabled by a base of scientific and technical capabilities. This role has been central to ANSTO's operations and our international standing over the past 70 years.

The dedicated nuclear stewardship science group at ANSTO provides expert and reliable scientific and technical advice internally as well as to the Australian Government, industry, and the international community on nuclear stewardship activities. Expert radioanalytical and environmental monitoring services meet the needs of ANSTO's nuclear operations, research and commercial activities. These capabilities also

support national and state emergency response services and provide international leadership in security operations, nuclear forensics and border security technology ...

Source: <https://www.ansto.gov.au/news/australia-home-to-one-of-world%E2%80%99s-best-nuclear-reactors>, February 28, 2023.

QATAR

MoECC Discusses Radiological, Nuclear Security Projects with IAEA

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The Ministry of Environment and Climate Change (MoECC) discussed the national and regional radiological and nuclear security projects with the IAEA. This was during a meeting between Abdulhadi al-Marri, Assistant Undersecretary for Environmental Affairs, MoECC, and Linda Eid, administrative officer for technical cooperation programmes for Qatar at IAEA. The meeting, according to a statement from MoECC, discussed Qatar's national

and regional projects aimed at achieving radiological and nuclear security as well as the country's efforts to support the peaceful uses of nuclear science and technology in cooperation with various state agencies in the fields of agriculture, radiological emergencies and food safety. The two parties also discussed the seven national projects that are being worked on in addition to three national projects for the next session, 2024-2025. The conversation also reviewed the Agreement for Arab States in Asia for Research, Development and Training related to Nuclear Science and Technology projects. Linda Eid also made several field trips to a number of the MoECC projects, accompanied by officials.

Source: <https://www.gulf-times.com/article/656580/qatar/moecc-discusses-radiological-nuclear-security-projects-with-iaea>, March 02, 2023.

NUCLEAR SAFETY

AZERBAIJAN-IAEA

Azerbaijani President, IAEA Chief Discuss Cooperation, Nuclear Safety

Azerbaijan's president discussed cooperation and nuclear safety with the head of the IAEA in the capital Baku. "The Director General of the IAEA congratulated the head of state on the success of Azerbaijan's chairmanship of the Non-Aligned Movement," said a statement by the office of President Aliyev, who met with the IAEA's Grossi.

The statement said Grossi noted that Azerbaijan's current position as chair of the NAM had "a practical nature" and contributed to international peace and security, while also further strengthening the role of the NAM globally. According to the statement, Grossi also drew attention to the development of cooperation between Azerbaijan and the IAEA, while Aliyev underlined the importance of using nuclear technology for peaceful purposes.

"In this regard, the practical importance of relations between Azerbaijan and the agency in the fields of agriculture, medicine, and petrochemicals was noted," the statement further noted. It also quoted Aliyev as saying that the Metsamor Nuclear Power Plant in Armenia posed a threat to Azerbaijan, Türkiye, and the entire region, as well as Yerevan itself. "At the meeting, the importance of compliance with the Treaty on

the Non-Proliferation of Nuclear Weapons by all states was expressed, and concern was expressed that attempts to create nuclear weapons could pose a serious threat to international peace and security." Earlier in the day, Aliyev chaired the summit of the NAM Contact Group on the fight against COVID-19 in Baku.

Prior to his meeting with Grossi, Aliyev also held meetings with his Turkmen and Libyan counterparts, as well as Algeria's prime minister and Csaba Korosi, the head of the 77th session of the UN General Assembly, all of whom

arrived in Azerbaijan on the occasion of the NAM meeting. The NAM was formed in 1961 under the leadership of then Yugoslavia when the world began to polarize during the Cold War. It currently has 120 members.

Source: <https://energycentral.com/news/azerbaijani-president-iaea-chief-discuss-cooperation-nuclear-safety>, March 03, 2023.

Azerbaijan's president discussed cooperation and nuclear safety with the head of the IAEA in the capital Baku. "The Director General of the IAEA congratulated the head of state on the success of Azerbaijan's chairmanship of the Non-Aligned Movement," said a statement by the office of President Aliyev, who met with the IAEA's Grossi.

Belgium's nuclear regulator has advised the government against a life extension of the country's three oldest reactors, despite the risk of a gap in electricity supply over the next two winters. Instead, it proposed adjusting the life extension plans of two newer reactors so that safety upgrades are staggered, keeping the power on during the coming crunch period.

BELGIUM

Belgian Nuclear Regulator Tells Govt Not to Extend Oldest Reactors

Belgium's nuclear regulator has advised the government against a life extension of the country's three oldest reactors, despite the risk of

a gap in electricity supply over the next two winters. Instead, it proposed adjusting the life extension plans of two newer reactors so that safety upgrades are staggered, keeping the power on during the coming crunch period. The proposal was in a written opinion submitted to the government by the regulator and seen by Reuters. The document has not been made public yet but the regulator, FANC, confirmed its authenticity to

Reuters. Belgium had planned to exit nuclear energy in 2025, but Russia's invasion of Ukraine has forced the government to rethink plans to rely more on natural gas.

Earlier this year the country reached a tentative agreement with nuclear operator Electrabel, a subsidiary of French energy company Engie, to extend the lives of two newer reactors for 10 years. But that plan would first require powering down the reactors for safety upgrades, which would leave Belgium with a 1.5 gigawatt power gap for the next two winters that cannot be replaced with other types of energy generation, electricity system operator Elia has warned. The government's proposed solution - temporarily extending the lives of Belgium's three oldest reactors - was too complex, would pose safety concerns, require additional nuclear fuel and mandate amendments to Belgium's nuclear regulatory framework, the regulator said. It would also run contrary to Engie's wishes, FANC added.

Instead, the regulator recommended extending the life of the two newer reactors, Doel 4 and Tihange 3, without stopping them for a full safety upgrade. Under the new plan, the reactors would be partially upgraded each summer beginning in 2025 to meet more stringent requirements over time, and remain available over the next two winters, after which other types of power plants are scheduled to come online. The Belgian government discussed the opinion at a cabinet meeting and agreed to ask Electrabel to submit safety documents to the regulator to assess the new plan for the younger reactors, a spokesperson for the energy ministry said. The spokesperson declined to specify whether the government was abandoning the idea of extending the lives of the three oldest reactors but said the government had "taken note" of the opinion and would take it into account. ...

Source: <https://www.reuters.com/business/energy/belgian-nuclear-regulator-tells-govt-not-extend-oldest-reactors-2023-03-06/>, March 06, 2023.

GENERAL

Importance of Robust Collaboration in Nuclear Safety and Security Highlighted at GNSSN Network Meeting

Capacity building initiatives and activities aimed at enhancing nuclear safety and security around the world were discussed at the recent Global Nuclear Safety and Security Network (GNSSN) Steering Committee Meeting, held at the IAEA headquarters in Vienna, Austria. Lingquan Guo, Head of the IAEA

Networks Management and Partnership Section, emphasized in his opening remarks that countries need to share good practices, promote knowledge networks and provide support in building capacities and competencies at all levels to further strengthen nuclear safety and security worldwide.

During the meeting 27 participants from IAEA member countries and international organizations exchanged views and their experiences, discussing progress achieved according to the GNSSN action plan. This included updates on the annual report, terms of reference and IT platform. The challenges of licensing a novel technology, required for small modular reactors, and the importance of ensuring sufficient and sustainable human resources for the life cycle of operating plants, were among the subjects discussed. Participants focused on the IAEA legislative assistance programme, paying particular attention to the importance of joining and adhering to relevant international legal instruments. Capacity building efforts to raise awareness about nuclear law, and the importance of sharing regulatory experiences---, aimed at improving the effectiveness of nuclear and radiation regulatory systems,-- were also discussed.

Participants were also updated on the GNSSN survey conducted last year to identify areas of focus and future interests related to regional networks. The survey aimed to foster further

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cooperation and coordination among the regional and thematic networks under the GNSSN framework. According to the survey, the top three focused topic areas from 2022-2025 are: drafting of regulatory documents, environmental monitoring, and radioactive waste management.

Alfredo de los Reyes Castelo, Head of International Relations at the Spanish Nuclear Safety Council and Chair of the GNSSN's Steering Committee, outlined the most recent achievements of the GNSSN networks: "Since the last GNSSN Steering Committee meeting in July 2022, progress has been made in identifying potential synergies in regional and thematic networks, to enhance inter-regional cooperation on the topic of nuclear safety and security, building further cooperation through joint technical projects, sharing best practices and lessons learned, as well as translating technical publications to reach a wider audience among the associated networks of GNSSN."

Anthony Wetherall, an IAEA Legal Officer, gave a presentation highlighting the support available to countries to enhance national nuclear legal frameworks. and explained that "the IAEA legislative assistance programme supports Member States, in establishing and strengthening national nuclear legal frameworks through workshops, training, outreach, and legislative reviews." He emphasised the availability of a country-specific, tailored support, citing as an example the IAEA's support of the national nuclear law concept in the Pacific Islands Member States.

The GNSSN Steering Committee members acknowledged that GNSSN continues to fulfil its objectives of sharing information, lessons learned and best practices. It also facilitates capacity

building to ensure effective and efficient nuclear safety and security infrastructures in countries through the implementation of activities such as regional and national workshops, training courses, and expert missions. ...

Source: <https://www.iaea.org/newscenter/news/importance-of-robust-collaboration-in-nuclear-safety-and-security-highlighted-at-gnssn-network-meeting>, March 07, 2023.

The 50-plus page report, *Nuclear Safety, Security and Safeguards in Ukraine*, details the events since Russian military action began on 24 February 2022, focusing on the impact on the nuclear energy sector in the country and the efforts of the IAEA to minimise the risks of damage to nuclear facilities as a result of the conflict.

"Two of Ukraine's nuclear power plants came under Russian control. The Chernobyl nuclear power plant and its Exclusion Zone were under Russian control for five weeks between 24 February and 31 March 2022. Zaporizhzhia NPP, which Russian troops entered on 4 March 2022, remains under Russian control.

UKRAINE

IAEA to Continue Zaporizhzhia Safety Zone Efforts as War Enters Second Year

IAEA Director General Grossi said the agency will do all it can to ensure nuclear safety, as it publishes a report covering the events of the past year. The 50-plus page report, *Nuclear Safety, Security and Safeguards in Ukraine*, details the events since Russian military action began on 24 February 2022, focusing on the impact on the nuclear energy sector in the country and the efforts of the IAEA to minimise the risks of damage to nuclear facilities as a result of the conflict.

In his foreword, Grossi summarises the key events of the past year which has seen "several" of Ukraine's five nuclear power plants and

other facilities come under direct shelling: Every single one of the IAEA's crucial seven indispensable pillars for ensuring nuclear safety and security in an armed conflict has been compromised, including the physical integrity of nuclear facilities; the operation of safety and security systems; the working conditions of staff; supply chains, communication channels, radiation monitoring and emergency arrangements; and the crucial off-site power supply.

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power plant and its Exclusion Zone were under Russian control for five weeks between 24 February and 31 March 2022. Zaporizhzhia NPP, which Russian troops entered on 4 March 2022, remains under Russian control." He lists the assistance provided by the IAEA in "doing the important work of reducing the likelihood of a nuclear accident or incident in close cooperation with – and at the request of – the Ukrainian authorities".

Grossi adds: "The nuclear safety and security situation at the Zaporizhzhia NPP continues to be fragile and

potentially dangerous. We are fortunate that a nuclear accident has not yet come to pass, and we must do everything in our power to minimise the chance that it does. Since returning from my first mission to the Zaporizhzhia NPP in September 2022, I have been urging all parties to swiftly implement a nuclear safety and security protection zone to reduce the risk of a nuclear accident at the Zaporizhzhia NPP. This proposal has found wide international support, and I continue my efforts in working with all parties to agree on the implementation of this vital precautionary measure."

Although both sides are agreed on the principle of there being a safety and security zone at and around the nuclear plant, the months of discussions have yet to conclude an agreement on all the precise details of how it will work at Europe's largest nuclear power plant, which is located on the current frontline of Russian and Ukraine forces. Grossi says: "As this tragic war enters its second year, I want to reassure the

people of Ukraine and the international community that they can count on the IAEA, and me as its Director General, to do everything

possible within our remit to assist them and to avert the danger of a nuclear accident that could cause even more suffering where there is already far too much."

In its conclusion, the report says: "The current situation in Ukraine is unprecedented and continues to be dangerous...it is thanks to the extraordinary efforts of Ukrainian operating staff...that all nuclear sites

have continued to operate safely and securely to date. The resilience and dedication they have shown by continuing to perform their crucial work to the best of their

abilities under difficult and stressful conditions affecting their health and well-being is to be commended."

It concludes with the message that "the current situation is untenable and the best action that can be taken to ensure the safety and security of Ukraine's nuclear facilities is an end to the armed conflict. The IAEA remains committed to provide any support it can to help ensure the safe and

secure operation of nuclear facilities and activities using radioactive sources in Ukraine both during the armed conflict and long after it ceases. The continued commitment and close cooperation of Member States with the IAEA is essential."

Source: <https://www.eurasiareview.com/27022023-ukraine-iaea-to-continue-zaporizhzhia-safety-zone-efforts-as-war-enters-second-year/>, February 27, 2023.

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China Supports IAEA's Efforts to Ensure Nuclear Security in Ukraine

China announced the contribution of 200,000 euros to the IAEA for its technical assistance to Ukraine, in support of the IAEA's efforts to address the issue of safety and security of nuclear power plants or other peaceful nuclear facilities in Ukraine. This was announced by Li Song, Permanent Representative of China to UN and other International Organizations in Vienna, at the Board of Governors meeting of IAEA. The ambassador also highlighted China's readiness to work with the IAEA to promote global development and nuclear safety and security, in line with the Global Development Initiative and Global Security Initiative. On February 24, 2023, Chinese Foreign Ministry released a 12-point position paper on a political settlement of the Ukraine crisis. "China opposes armed attacks against nuclear power plants or other peaceful nuclear facilities," the paper said, adding that China supports IAEA "in playing a constructive role in promoting the safety and security of peaceful nuclear facilities." IAEA's attempts to reach Zaporizhzhia. At IAEA's fourth attempt, a long-delayed rotation of experts was carried out at Ukraine's Russian-occupied Zaporizhzhia nuclear power station, according to IAEA Director General Rafael Grossi.

The rotation ended "an impasse that had complicated the IAEA's efforts to support nuclear safety and security during the military conflict in the country," the announcement said. Grossi also claimed that IAEA monitors had reported more explosions near the plant, which on March 2 lost its only remaining back-up power line for the third time in less than week. He has been pressing both

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sides to establish a demilitarized "safe zone" around the station. Russia has accused IAEA of disrupting the latest monthly staff rotation, which had been put back three times. With Ukraine and Russia accusing each other of shelling it and risking a nuclear accident, IAEA monitors have been posted at the station since September.

Source: <http://eng.chinamil.com.cn/VOICES/16206653.html>, March 07, 2023.

SMALL MODULAR REACTORS

CANADA

Ottawa Announces further Backing for SMR Deployment with Millions in Funding for R&D Projects

Canada is offering up to CAD5m (\$3.6m, €3.4m) to fund research and development projects that support provinces and territories as they work to develop and deploy small modular reactors as part of their decarbonisation and economic development plans.

Canada is offering up to CAD5m (\$3.6m, €3.4m) to fund research and development projects that support provinces and territories as they work to develop and deploy small modular reactors as part of their decarbonisation and economic development plans. The government, which has already announced tax credit and budget support for reactors projects, said it is aiming to support funding applicants in their efforts to address waste generated from SMRs and develop supply chains for SMR manufacturing and SMR fuel supply.

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Waste management projects could include identifying and characterising waste streams; researching waste management solutions; understanding the long-term safety requirements for waste storage and disposal; and exploring packaging and transportation requirements.

Supply chain projects could include developing techniques for SMR construction; economic analysis of nuclear and non-nuclear supply chains; and the economic impact and understanding policies related to fuel fabrication and or enrichment in Canada. The funding programme aims to support the use of SMRs to displace fossil fuels and contribute to climate change mitigation. It will provide up to 75% of the total project costs. The average funding for a project is likely to be between CAD500,000 and CAD2.5m. Funding is available for projects until 31 March 2027. The government said Canadians need to look to all forms of clean energy in order to meet net-zero goals and it has committed to working with the provinces and territories to enable deployment of SMRs.

It said it had demonstrated its continued support for SMRs in its 2022 budget, which included nearly CAD120m for Natural Resources Canada and the Canadian Nuclear Safety Commission to support activities related to SMR development such as nuclear waste reduction, building SMR regulatory capacity and creating a fuel supply chain. Canada has a fleet of 19 large-scale nuclear power plants that provide about 14% of its electricity generation. In November 2022 the government introduced a tax credit that confirmed it considers nuclear power to be “clean energy” on par with all other low-carbon technologies, including renewables.

Four provinces have published a strategic plan for the deployment of SMRs, calling for the federal government to back ambitious deployment plans and a new class of Generation IV micro-SMR for

remote communities and mines. In December 2022 site preparation began for Canada's first SMR at Ontario Power Generation's Darlington nuclear site. Earlier this year US-based reactor developer X-energy announced investment from South Korea-based multinationals DL E&C and Doosan Enerbility in a private round of financing to support the advancement of the global deployment of its Xe-100 Generation IV advanced SMR. Utility SaskPower has chosen two sites in Saskatchewan for the potential construction of an SMR.

Source: <https://www.nucnet.org/news/ottawa-announces-further-backing-for-smr-deployment-with-millions-in-funding-for-r-and-d-projects-2-1-2023>, February 27, 2023.

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France's EDF has signed a Letter of Intent with Italy's Ansaldo Energia, Ansaldo Nucleare and Edison to assess potential industrial cooperation for the development of nuclear power in Europe, including in Italy, specifically in the field of SMRs. "The aim of the agreement is to immediately leverage on the expertise of the Italian nuclear power sector, headed by Ansaldo Nucleare, in order to support the development of EDF Group's new nuclear projects, and at the same time to open a debate on the possible role of new nuclear power in Italy's energy transition.

FRANCE-ITALY

EDF Teams up with Italian Partners on SMR Development

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In particular, the companies plan to explore

potential industrial cooperation, drawing on their respective skills. Ansaldo Energia Group is a developer of engineering components and service provider for the energy and nuclear industry, while Edison is a leading Italian energy player, "fully engaged in Italy's energy transition". EDF is involved in new nuclear projects based on its portfolio of technologies, including the Nuward SMR, the mid-size EPR1200 reactor and the large-size EPR reactor.

Ansaldo Nucleare CEO Casale added: "Ansaldo Energia Group managed to successfully keep its nuclear expertise alive, after the closing of nuclear power plants in Italy. We strongly believe in this mission and actively participate in many projects in several European countries, in collaboration with Italian industries and research organisations, testifying the high added value that Italy can bring to the renewed interest in nuclear power in Europe".

...The Nuward project was launched in September 2019 by the French Alternative Energies and Atomic Energy Commission (CEA), EDF, Naval Group and TechnicAtome. The Nuward - consisting of a 340 MWe SMR plant with two PWRs of 170 MWe each - has been jointly developed using France's experience in PWRs. The technology is expected to replace old high CO2-emitting coal, oil and gas plants around the world and support other applications such as hydrogen production, urban and district heating or desalination. EDF and Ansaldo Nucleare recently signed a first contract for provision of engineering studies for the Nuward SMR.

In October 2022, Westinghouse and Ansaldo

Nucleare signed a new cooperation agreement to develop a next generation nuclear power plant based on Lead-cooled Fast Reactor (LFR) technology. In March last year, UK-based innovative reactor developer Newcleo signed a framework agreement with ENEA - the Italian national agency for new technologies, energy and sustainable economic development - to cooperate on the development of small LFRs.

Source: <https://www.world-nuclear-news.org/Articles/EDF-teams-up-with-Italian-partners-on-SMR-developm>, March 06, 2023.

ROMANIA

Romania on Track to become First Country with SMR Nuclear Power Plant

Prime Minister Ciucă said the small modular reactor project with US-based Fluor and NuScale would enable Romania to supply electricity to the region. Romania is on track to become the first country to have the newest, safest and cleanest nuclear

technology, the Government of Romania said. Prime Minister Ciucă met with the representatives of Fluor, a corporation based in the US. It is listed on the New York Stock Exchange and has an annual turnover of nearly USD 15 billion, the announcement adds.

Fluor is the biggest shareholder of NuScale Power, a developer of SMR technology. The firm was the first to have the innovative nuclear energy facility design certified by The US Nuclear Regulatory Commission (NRC). Ciucă said the SMR project in Doiceşti with state-owned nuclear power plant operator Nuclearelectrica is in the national interest, adding that it benefits from the highest

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level of support from the US. Romania is determined to headline new green energy capacities and create highly qualified jobs. ...

In November 2021, Nuclearelectrica and NuScale Power signed an agreement to advance the implementation of NuScale's SMR technology in Romania by the end of the decade. In May 2022, Nuclearelectrica, NuScale and E-Infra, the owner of the site, signed a memorandum of understanding for the development of the first SMR in Romania, on the location of the former thermal power plant in Doice'ti in Dâmbovia county. Fluor is envisaged to coordinate engineering, procurement, and construction (EPC).

Source: <https://balkangreenenergynews.com/romania-on-track-to-become-first-country-with-smr-nuclear-power-plant/>, February 25, 2023.

USA

Dow and X-energy Advance Efforts to Deploy First Advanced Small Modular Nuclear Reactor at Industrial Site Under DOE's Advanced Reactor Demonstration Program DOW, the world's leading materials science company, and X-Energy Reactor Company, LLC ("X-energy"), a leading developer of advanced nuclear reactors and fuel technology for clean energy generation, announced today their entry into a joint development agreement ("JDA") to demonstrate the first grid-scale advanced nuclear reactor for an industrial site in North America.

As a subawardee under the U.S. Department of Energy's ("DOE") Advanced Reactor Demonstration Program ("ARDP") Cooperative Agreement with X-energy, Dow intends to work with X-energy to install their Xe-100 high-temperature gas-cooled reactor ("HTGR") plant at one of Dow's U.S. Gulf Coast sites, providing the site with safe, reliable, low-carbon power and steam within this decade. The JDA includes up to

\$50 million in engineering work, up to half of which is eligible to be funded through ARDP, and the other half by Dow. The JDA work scope also includes the preparation and submission of a

Construction Permit application to the U.S. Nuclear Regulatory Commission ("NRC").

"The utilization of X-energy's fourth generation nuclear technology will enable Dow to take a major step in reducing our carbon emissions while delivering lower carbon footprint products to our customers

and society," said Jim Fitterling, Dow chairman and CEO. "The collaboration with X-energy and the DOE will serve as a leading example of how the industrial sector can safely, effectively and affordably decarbonize."

Working with DOE and subject to its review and approval, Dow and X-energy expect to finalize site selection in 2023. The parties intend to perform further ARDP-related work under the JDA as the project progresses. Additionally, the companies have agreed to develop a framework to jointly license and utilize the technology and learnings from the project, which would enable other industrial customers to effectively utilize Xe-100 industrial low carbon energy technology.....

Source: <https://www.businesswire.com/news/home/20230301005119/en/Dow-and-X-energy-Advance-Efforts-to-Deploy-First-Advanced-Small-Modular-Nuclear-Reactor-at-Industrial-Site-Under-DOE%E2%80%99s-Advanced-Reactor-Demonstration-Program>, March 01, 2023.

NUCLEAR COOPERATION

EU

Eleven EU Countries Launch Alliance for Nuclear Power in Europe

Eleven European countries committed on 28 February to "cooperate more closely" across the entire nuclear supply chain, and promote "common industrial projects" in new generation

capacity as well as new technologies like small reactors. The signatories signed a declaration in Stockholm, with the objective of “jointly reaffirming their desire to strengthen European cooperation in the field of nuclear energy” according to a statement issued on Tuesday (28 February).

“Nuclear energy is one of many tools to achieve our climate goals, to generate baseload electricity and to ensure security of supply,” reads the declaration, which was signed on the margins of a meeting of EU energy ministers organised by Sweden, the current holder of the EU’s six-month rotating presidency. French Energy Transition Minister Agnès-Pannier Runacher, who initiated the meeting, said the objective of the alliance was “to structure cooperation on the whole nuclear value chain” and provide Europe “with all the tools to reach carbon neutrality by 2050”. The eleven signatories include Bulgaria, Croatia, Czech Republic, Finland, France, Hungary, the Netherlands, Poland, Romania, Slovakia, and Slovenia. The EU Commissioner for Energy, Kadri Simson, also took part in the meeting, an EU official confirmed.

“Common Industrial Projects”: *The objectives of the cooperation is to promote research and innovation as well as helping to set “uniform safety rules in accordance with best international practice,” reads the joint declaration. Crucially, it also seeks “to reinforce industrial cooperation in the development of European nuclear capacity” and to explore “common industrial projects” for new reactors. “It was a very good discussion which made it possible to highlight common issues,”*

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Pannier-Runacher told journalists after the meeting. “These issues are those of innovation and new SMR reactors, the question of skills, the authorisation of new facilities” and cooperation on existing installations and nuclear subcontracting, she said.

Commissioner Simson, who took part in the meeting alongside the eleven energy ministers, invited the participating countries to diversify away from Russian nuclear fuels and actively participate in partnerships on SMRs, EU sources told EURACTIV. Participants also “felt the need to work on a regulatory or legal framework for nuclear” that enables the technology to play its full part in decarbonising the European economy “without obviously opposing it to renewable energies,” said Pannier-Runacher.

The idea is to take greater account of nuclear in all legislative texts being discussed in the EU institutions, explained the cabinet of the French minister. Polish energy minister Anna Moskwa, who also took part in the meeting, said: “I believe this will not be the last step. We do not exclude additional meetings dedicated to the nuclear issue,” she said in comments reported by French news service Contexte.

Italy, which was initially tipped to join the alliance, did not sign the joint declaration in the end, although Pannier-Runacher said the group was open to new members. Sweden, which participated in the meeting, expressed interest in joining the group but chose to stay neutral because it currently holds the EU’s rotating presidency. Still, Stockholm and Paris appear committed to cooperating further on nuclear. “On

a bilateral basis, we are developing an energy partnership about nuclear power with Sweden," said the cabinet of Agnès Pannier-Runacher, adding that "a letter of intent" was being prepared to that effect.

The French-Swedish cooperation on nuclear follows a visit of Prime Minister Kristersson in Paris on 3 January, where the two sides outlined potential collaboration, including on "wind power, hydroelectric power and stable, fossil-free nuclear energy." French electricity utility EDF "is at the disposal of Swedish authorities to discuss a possible cooperation," the French energy ministry said.

Source: <https://www.euractiv.com/section/energy-environment/news/eleven-eu-countries-launch-alliance-for-nuclear-power-in-europe/>, March 01, 2023.

POLAND-EU

Warsaw Welcomes Tighter Nuclear Energy Ties within EU

The countries agreed to support new projects alongside existing nuclear power plants, according to a statement released during a two-day meeting of EU energy ministers in Stockholm, the AFP said. "Nuclear energy is one of many tools for achieving our climate targets" to produce electricity to meet consumer demand and "for security of supply," the statement reads. Other than Poland and France, which spearheaded the effort to build closer European nuclear energy ties, the group consists of Bulgaria, Croatia, the Czech Republic, Finland, Hungary, the Netherlands, Romania, Slovakia and Slovenia. "I cannot imagine heavy industry or sensitive infrastructure such as

Paris believes nuclear power can help Europe achieve its climate objectives, especially to produce "green" hydrogen for transport and industry, according to the AFP. However, the issue of nuclear power has divided the bloc and several EU states are fiercely opposed, with Germany and Spain leading the criticism.

schools and hospitals relying solely on renewable energy sources," Poland's Climate and Environment Minister Anna Moskwa told Polish state news agency PAP during the Stockholm meeting. She added that traditional energy sources were essential and that their availability should be ensured, the PAP news agency reported. "If Europe wants to develop renewable energy sources, then for the sake of security, we urge the availability of reliable energy sources such as coal, gas, biomass, geothermal and nuclear," Moskwa told PAP. "They must always be in the picture."

Paris believes nuclear power can help Europe achieve its climate objectives, especially to produce "green" hydrogen for transport and industry, according to the AFP. However, the issue of nuclear power has divided the bloc and several EU states are fiercely opposed, with Germany and Spain leading the criticism, the AFP reported. Warsaw has been planning a national nuclear programme for years but the question of energy security took on added urgency after Russia invaded Ukraine more than a year ago.

Poland's Prime Minister Morawiecki has said the country plans to build a total of "six reactors in three nuclear power plants." The first unit of a new Polish nuclear power plant is expected to be put into operation in 2033, under a long-term energy policy adopted by the government in 2021.

Alongside US and South Korean companies, France is also keen on joining Poland's nuclear energy drive through its state-controlled multinational electric utility company Électricité de France (EDF). In October 2021, EDF made an offer to the Polish government to build six European Pressurised Reactor (EPR) units. Poland's Prime Minister Morawiecki has said the country plans to build a total of "six reactors in three nuclear power plants." The first unit of a new Polish nuclear power plant is expected to be put into operation in 2033, under a long-term energy policy adopted by the government in 2021.

Source: <https://www.polskieradio.pl/395/7786/Artykul/3127761,warsaw-welcomes-tighter-nuclear-energy-ties-within-eu>, March 01, 2023.

NUCLEAR NON-PROLIFERATION

UKRAINE

IAEA Examines that Nuclear Energy in Ukraine not Used for Military Purposes – Director General

A few months ago, accusations were made of making dirty bombs in Ukraine, IAEA Director General Grossi told reporters at the Summit of the NAM Contact Group in response to COVID-19 in Baku, Trend reports. “We responded immediately and went there. Studies established that the rumors were false, and all delusions and doubts in this direction were eliminated. We work in Ukraine and examine that nuclear energy there is not used for military purposes” he added. ...

Source: <https://en.trend.az/azerbaijan/politics/3717577.html>, March 02, 2023.

China Urges to Prevent Nuclear Proliferation, Avoid Nuclear Crisis

China urges to prevent the proliferation of nuclear weapons and avoid a nuclear crisis, the Chinese foreign ministry said on Friday (Feb 24) in its statement on political settlement of the crisis in Ukraine, Trend reports citing TASS. “Strategic risks need to be reduced. Nuclear weapons must never be used, a nuclear war must never be unleashed. It is necessary to resist the use of nuclear weapons and threats to use it, to prevent nuclear proliferation and to avert a nuclear crisis,” the document says. It also calls to maintain security

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An IAEA report revealed that during an inspection “on 22 January 2023, the agency took environmental samples... at the Fordow (sic) plant, the analytical results of which showed the presence of highly enriched uranium particles containing up to 83.7% U-235.” “These events clearly indicate the capability of the agency to detect and report in a timely manner, changes in the operation of nuclear facilities in Iran,” it continued.

of nuclear power plants. “China strongly opposes attacks on nuclear power plants and other civilian nuclear facilities. We call upon all sides to respect the international law, including the Convention on nuclear security,” the Chinese foreign ministry said.

Source: <https://en.trend.az/world/other/3714586.html>, February 24, 2023.

NUCLEAR PROLIFERATION

IRAN

UN Nuclear Watchdog Confirms Traces of Bomb-Grade Uranium in Iran

The IAEA confirmed that it has discovered traces of uranium enriched to 83.7% in Iran, barely under the 90% minimum needed to produce a nuclear bomb. “Discussions are still ongoing” to determine the origin of these particles, the IAEA said in a report seen by AFP. Asked about the particles found in Iran, the government in Tehran said “unintended fluctuations” during the enrichment process “may have occurred.” In 2015, Iran reached a deal with world powers to limit the enrichment of uranium and allow IAEA inspectors to visit its nuclear sites, in return for the lifting of economic sanctions. But the deal stalled in 2018.

Iran has been enriching uranium well over the limits laid down in the deal and the IAEA believes its estimated stockpile is more than 18 times the limit set out in that accord. An IAEA report revealed that during an inspection “on 22 January 2023, the agency took environmental samples... at the Fordow (sic) plant, the analytical results of which showed the presence of highly enriched uranium particles containing up to 83.7% U-235.” “These events clearly indicate the capability of the agency to detect and report in a timely manner, changes in the operation

of nuclear facilities in Iran," it continued.

In the report, the UN' nuclear watchdog also said that Iran's estimated stockpile of enriched uranium had reached more than 18 times the limit set out in the 2015 accord between Tehran and world powers. The IAEA estimated Iran's total enriched uranium stockpile was 3,760.8 kilograms (8,291 pounds) as of Feb. 12, an increase of 87.1 kilograms compared to the last report in November. The limit in the 2015 Iran nuclear deal was set at 202.8 kilograms of uranium. The IAEA has also repeatedly warned it has lost its ability to fully monitor Iran's program since the country started to restrict its access in February 2021. Iran's stockpile of uranium enriched to 60% is now at 87.5 kilograms, up from 62.3 kilograms, the report said. Iran currently also has 434.7 kilograms of uranium enriched up to 20%, up from 386.4 kilograms in the November report.

Tehran has always stressed that it is only interested in peaceful nuclear technology. In 2015, Iran pledged to limit its nuclear program, which led to Western sanctions being lifted in return. The pact was intended to prevent the construction of nuclear weapons by Tehran. After the U.S. unilaterally pulled out of the agreement in 2018 under then-president Trump, Tehran responded by expanding its uranium enrichment and limiting IAEA inspections. Negotiations to revive the nuclear agreement, in which Germany is also involved, have been stalled for months.

Source: <https://www.dailysabah.com/world/mid-east/un-nuclear-watchdog-confirms-traces-of-bomb-grade-uranium-in-iran>, February 28, 2023.

IAEA's Grossi Holds Second Day of Talks in Iran on Nuclear Cooperation

The head of the IAEA Grossi held talks for a second day in Iran aimed at pushing the country to cooperate with a probe into uranium traces found at undeclared sites. Grossi, who arrived in Tehran

on a two-day visit, met for the second time with the head of Iran's Atomic Energy Organization, Mohammad Eslami, the official Iranian news agency IRNA reported. The visit comes amid

Grossi, who arrived in Tehran on a two-day visit, met for the second time with the head of Iran's Atomic Energy Organization, Mohammad Eslami, The visit comes amid discussions with Tehran on the origin of uranium particles enriched to up to 83.7% purity, very close to weapons grade, at its Fordow enrichment plant, according to a report by the nuclear watchdog seen by Reuters.

discussions with Tehran on the origin of uranium particles enriched to up to 83.7% purity, very close to weapons grade, at its Fordow enrichment plant, according to a report by the nuclear watchdog seen by Reuters. "The issue of monitoring the performance, status and capacity of the nuclear industry of the Islamic Republic is the most

important goal that is on the agenda of the agency," IRNA quoted Eslami as saying before his meeting with Grossi. "The parties did not fulfil their commitments" in the 2015 nuclear deal, and so Iran decided to "reduce its commitments".

..."The agenda of these meetings include remaining safeguard issues as well as technical and legal disagreements between Iran and the IAEA," IRNA said in a commentary, without elaborating. Iran's stonewalling of the IAEA's years-long investigation into uranium traces found at three undeclared sites prompted the UN watchdog's 35-nation Board of Governors to pass a resolution at its last quarterly meeting in November ordering Tehran to cooperate urgently with the probe. That cooperation has not materialised and Grossi is hoping that a meeting with hardline President Raisi would help smooth the way toward ending the deadlock, diplomats in Europe say. The board's next quarterly meeting starts on Monday (6 March).

Source: <https://www.reuters.com/world/middle-east/iaeas-grossi-holds-second-day-talks-iran-nuclear-cooperation-2023-03-04/>, March 04, 2023.

USA-AUSTRALIA

The Aukus scheme announced on Monday (13 March) in San Diego represents the first time a loophole in the 1968 NPT has been used to transfer

fissile material and nuclear technology from a nuclear weapons state to a non-weapons state. The loophole is paragraph 14, and it allows fissile material utilised for non-explosive military use, like naval propulsion, to be exempt from inspections and monitoring by the UN nuclear watchdog, the IAEA. It makes arms controls experts nervous because it sets a precedent that could be used by others to hide highly enriched uranium, or plutonium, the core of a nuclear weapon, from international oversight.

On 14 March, the Chinese mission to the UN accused the US and UK of “clearly violating the object and purpose of the NPT”, adding that “such a textbook case of double standard will damage the authority and effectiveness of the international non-proliferation system”. “The nuclear submarine cooperation plan released today by Aukus is a blatant act that constitutes serious nuclear proliferation risks, undermines international non-proliferation system, fuels arms races, and hurts peace and stability in the region,” the mission said.

The IAEA said in a statement that Australia, the US and UK had informed it of the deal, but reiterated that the “legal obligations” of the three countries to non-proliferation were “paramount”. “Ultimately, the [IAEA] must ensure that no proliferation risks will emanate from this project,” it said. ...The Chinese mission to the UN accused the US and UK of “clearly violating the object and purpose of the NPT”, adding that “such a textbook case of double standard will damage the authority and effectiveness of the international non-proliferation system”. “The nuclear submarine cooperation plan released today by Aukus is a blatant act that constitutes serious nuclear proliferation risks, undermines international non-proliferation system, fuels arms races, and hurts peace and stability in the region,” the mission said.

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The Aukus partners have held intensive discussions with the IAEA about the plans and taken steps to limit the risk. Early on in the talks, the idea was floated that paragraph 14 might not be invoked at all, and the nuclear fuel would be kept under IAEA safeguards. However, the IAEA was not prepared to have its inspection standards watered down to the extent that the agency would not be able to determine the timing of a visit, and the Aukus partners were squeamish about letting an international team of inspectors onboard their state-of-the-art submarines.

To mitigate the proliferation risk, the Australians have agreed not to have a training reactor on their territory, but to train their submariners in the US and UK instead. Australia will not enrich or reprocess the spent nuclear fuel, and the fissile material provided by the US and UK will come in welded units that do not have to be refuelled in their lifetime. Australia has undertaken not to acquire the equipment necessary to chemically reprocess spent fuel that would make it usable in a weapon.

“Since day one of this effort, or consultation period, we have prioritised non-proliferation,” a

senior US official said. The IAEA director general, Rafael Mariano Grossi, has said he believes the Aukus partners “are committed to ensuring the highest non-proliferation and safeguards standards are met”, and noted his “satisfaction with the engagement and transparency shown by the three countries thus far”. “I do think the three countries are quite serious about trying to mitigate the harm to the non-proliferation regime. ...

Source: Julian Borger, <https://www.theguardian.com/world/2023/mar/13/aukus-australian-submarine-nuclear-loophole-proliferation-fears>, March 14, 2023.

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against non-nuclear weapon states. This will incentivize nations that have complied with their obligations under the Non-Proliferation Treaty, and increase mutual trust between states that possess nuclear weapons and those that do not.

Retno also called on the UN to strengthen the architecture of nuclear disarmament and non-proliferation, and facilitate compliance with nuclear weapon-free zones. “As the Chair of ASEAN this year, Indonesia will continue to promote nuclear weapon-

free zones in the Southeast Asian region,” the Foreign Minister said. This will be done by seeking the signing of the Protocol on Nuclear Free Zones in Southeast Asia. Indonesia and the Southeast Asian nations are facing challenges from direct tensions between the US and China’s as they compete for influence in the Indo-Pacific. Nuclear

NUCLEAR DISARMAMENT

GENERAL

Indonesia’s Foreign Minister Urges Nuclear Disarmament

Indonesia’s Minister of Foreign Affairs Marsudi urged countries to join efforts to promote nuclear disarmament. She made her call during her address at the Conference on Disarmament meeting in Geneva, Switzerland, February 27. “Without decisive concrete action, a nuclear disaster is only a matter of time, and this risk is getting bigger as the major powers’ rivalry intensifies,” said the Foreign Minister. Minister Retno said that nuclear disarmament efforts require political will. The main focus to be encouraged, she said, is legally binding Negative Security Assurances (NSA) that guarantees that nuclear weapon states will not use or threaten the use of nuclear weapons

Minister Retno said that nuclear disarmament efforts require political will. The main focus to be encouraged, she said, is legally binding Negative Security Assurances (NSA) that guarantees that nuclear weapon states will not use or threaten the use of nuclear weapons against non-nuclear weapon states. This will incentivize nations that have complied with their obligations under the Non-Proliferation Treaty, and increase mutual trust between states that possess nuclear weapons and those that do not.

concerns increased after Russia’s invasion of Ukraine entered its second year, with no signs of ending soon. Last week, President Putin announced that Russia would suspend New START, the last nuclear-arms agreement between Moscow and the US. When visiting Poland last weekend, US President Biden called Putin’s decision irresponsible, while NATO secretary general Jens Stoltenberg said in a statement days

ago that the world is more in danger as Russia decides not to continue its nuclear treaty.

Source: <https://en.tempo.co/read/1696734/indonesias-foreign-minister-urges-nuclear-disarmament>, February 28, 2023.

KAZAKHSTAN

Kazakh Foreign Ministry Says Next Edition of START Treaty should be Discussed

Kazakhstan believes it's necessary to have a discussion of about the next edition of the Strategic Arms Reduction Treaty after 2026, the country's Foreign Ministry said in a statement. The statement followed a speech by Kazakh Foreign Minister Mukhtar Tileuberdi at the Conference on Disarmament High Level Segment in Geneva. "Kazakhstan, as a staunch supporter of nuclear disarmament, considers it necessary to discuss the issue of the next Strategic Arms Reduction Treaty after 2026. It's also important that the five nuclear powers demonstrate a firm commitment to the joint statement adopted in January 2022 on the inadmissibility of nuclear war," the statement said.

Tileuberdi noted that the situation in the world has become more dangerous over the past year. The conflict in Ukraine, huge nuclear arsenals, escalating nuclear rhetoric and a lack of dialogue are leading the world in a dangerous direction. "The minister stressed that Kazakhstan consistently supports the Treaty on the Prohibition of Nuclear Weapons and will preside at the Third Conference of the States Parties to the TPNW," the ministry said in the statement.

It was noted that special attention of the conference participants was drawn to the initiative of Kazakh President Tokayev to establish an international agency for biological safety. "This agency could act as an executive body of the Convention on the Prohibition of Biological and Toxin Weapons

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Moscow maintained contact through "secret channels" with the US after its announcement of the suspension of START III or New START, the last nuclear disarmament treaty still in force with the US. "Official sources in Washington said that the discussion of this issue continued through secret channels. I can confirm that this is true," said Russian Deputy Foreign Minister Sergei Riabkov, quoted by the Interfax agency.

and pay special attention to the needs of developing countries," the Foreign Ministry said. The Conference on Disarmament is the only permanent multilateral disarmament and arms control negotiating forum. The CD has developed such agreements as the NPT, the Biological Weapons Convention, the Chemical Weapons Convention and the CTBT.

Source: <https://tass.com/world/1583319>, March 01, 2023.

RUSSIA

Moscow Says it is in Contact with the US on Nuclear Disarmament

Moscow maintained contact through "secret channels" with the US after its announcement of the suspension of START III or New START, the last nuclear disarmament treaty still in force with the US. "Official sources in Washington said that the discussion of this issue continued through secret channels. I can confirm that this is true," said Russian Deputy Foreign Minister Sergei Riabkov, quoted by the Interfax agency. But, he added, what is important is that it is said through "open streams". Riabkov stated that communication with the US will continue "with such necessity". "As long as it is necessary, we will talk and exchange information," he said, adding that there is no "special action" and no regular contact either. However, the Russian diplomat stated that Moscow is aware of the

importance of the matter.

Russian President Putin announced the suspension of Russia's participation in START III with the decision taking effect. Earlier, the measure, which was announced by the head of

the Kremlin in his state of the nation address on February 21, received the approval of both houses of the Russian parliament. In his message, Putin forced Russia to increase its participation in the alliance because of Western policy. Russia's ambassador to the US, Anatoly Antonov, was accused by Washington of systematically violating his obligations under the treaty, which also led to his suspension. A new START was signed in Prague on April 8, 2010 by the then president of the US, Barack Obama, and Russia, Dmitri Medvedev. The treaty limited the number of strategic nuclear weapons, with a maximum of 1,550 nuclear warheads and 700 ballistic systems for each of the two powers, land, sea or air.

Source: <https://nationworldnews.com/moscow-says-it-is-in-contact-with-the-us-on-nuclear-disarmament/>, March 01, 2023.

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especially in communities exploring their potential to host the project," Lise Morton, vice-president of site selection at the NWMO, said in a previous press release. "Making this small adjustment in timing also gives us and the potential host communities additional time to review and absorb

new information as they consider if hosting the project aligns with their vision and priorities," the statement continued. The location of a deep geological repository to hold all of Canada's nuclear waste is a significant decision for the industry's future. The repository will

have to weather climate change and ice ages, according to NWMO's website.

The project would see a facility about the size of the CN Tower housed 500 feet underground. Currently, all nuclear waste is stored on-site at Canada's four major nuclear power plants, three of which are in Ontario. Those plants supply 56 per cent of the province's power generation,

according to Canada's Energy Regulator. However, Canada is set to expand nuclear energy with the emergence of small modular reactors, or SMRs. Ottawa is banking on SMRs to help achieve Canada's climate goals by replacing coal plants, powering heavy industry operations in places like the oilsands and remote mines, and providing electricity for remote communities reliant on diesel.

SMRs are not currently produced or in use anywhere in Canada. But Ontario, Alberta, Saskatchewan and New Brunswick have their eye on introducing them sometime over the next two decades. The fossil fuel industry is also touting SMRs as a way to decarbonize Alberta's tar sands,

NUCLEAR WASTE MANAGEMENT

CANADA

Nuclear Waste Management Organization Extends Underground Storage Site Selection until 2024

Site selection for an underground repository for Canada's nuclear waste has been postponed to provide more time for in-person consultation with First Nation communities and municipalities. A representative from Nuclear Waste Management Organization (NWMO), the non-profit organization responsible for the waste facility, told *Canada's National Observer* the location decision has been pushed to 2024.

"We experienced a significant loss of time for face-to-face engagement and interaction,

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according to reporting by *Canada's National Observer*. However, SMRs are set to produce more nuclear waste than conventional plants, according to research conducted by Stanford University and the University of British Columbia.

Currently, there are two deep geological repositories under development in the world. Onkalo in Finland and a site in development by radioactive waste disposal co-operative Nagra in the northern region of Switzerland. Both sites are not yet housing waste, with Onkalo set to begin operations in a year or two. In Canada, there are two proposed regions for site selection: Ignance and area, which is 250 kilometres northwest of Thunder Bay, and South Bruce, which is 180 kilometres northwest of Toronto.

Source: <https://www.nationalobserver.com/2023/02/27/news/nuclear-waste-organization-extends-site-selection-underground-storage>, February 27, 2023.

GHANA

Nuclear Waste Storage Facility to be Established in Ghana

The Deep Geo Ghana Limited, an environmental management company, and the Ghana Geological Survey Authority (GGSA) have agreed to work together towards the construction of a nuclear waste storage facility to support Ghana's Nuclear Power Programme. Ghana has intensified efforts to add nuclear power to the country's energy mix – the target is to build and operate the country's first nuclear power plant by 2030.

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The Deep Geo and the GGSA signed a Memorandum of Understanding, in which the two institutions expressed their commitment to conduct feasibility studies on the construction of a deep geological repository for nuclear spent fuel in the country. The GGSA is expected to conduct some geophysical studies and identify three candidates sites, out of which one would be selected as a preferred site for the facility. Mr Link Murray, Chief Executive Officer, Deep Geo Repository Incorporated, and Mr David Amoah, CEO, Deep Geo Ghana Limited, signed the MoU on behalf of Deep Geo while Mr Isaac K. Mwinbelle, Acting Director

General, GGSA, signed on behalf of the Authority. The deep geological repository is a network of underground tunnels and placement rooms for used nuclear fuel containers. It is designed to safely contain and isolate used nuclear fuel over the long term.

Mr Amoah told the Ghana News Agency that Deep Geo was interested in managing Ghana's nuclear waste in future, hence its decision to put the necessary arrangements in place ahead of time. "By 2030, Ghana should be producing nuclear power. Nuclear power will be generating nuclear waste and we should be thinking on how to store that waste. That is why we want to go ahead and do this study and

possibly construct the repository," he said. Mr Amoah said the facility to store nuclear waste required a location with a stable geology, adding that the signing of the MoU was the first of many activities to be undertaken. Mr Murray said Deep

Geo had a track record of assisting Canada to construct its Deep Geological Repository, and assured that the firm was willing to support Ghana to effectively manage its nuclear waste in future. Mr Mwinbelle said the GGSA was committed to providing the necessary technical assistance to Deep Geo to help achieve the desired goal. "This is in line with our mandate and we are ready to assist you in fulfilling this dream in the interest of national development," he said.

President Akufo-Addo in August last year approved the inclusion of nuclear technology into Ghana's power generation mix. The move is in consonance with the global collective commitment to the sustainable availability of power, and the peaceful exploitation of nuclear energy to enhance rapid industrialisation, and to propel economic growth.

Source: <https://newsghana.com.gh/nuclear-waste-storage-facility-to-be-established-in-ghana/>, March 04, 2023.

SLOVAKIA

IAEA Mission Reviews Slovakia's Radwaste Management

An IAEA Integrated Review Service for Radioactive Waste & Spent Fuel Management, Decommissioning & Remediation (Artemis) team has completed a review in Slovakia. The mission concluded that Slovakia is committed to the safe and effective management of radioactive waste and used fuel. It also commended Slovakia for its decommissioning activities while noting opportunities to enhance preparations for geological disposal.

The 10-day mission was carried out at the request

of the government and was hosted by the Slovak National Nuclear Fund. The team comprised six experts from Germany, Lithuania, South Africa, Sweden, Switzerland and the UK, as well as two IAEA staff members and a EU observer. Discussions were held with the government, the regulatory bodies, the NPP operator, the Slovak Nuclear & Decommissioning Company (JAVYS) and the National Nuclear Fund. The mission also aimed to support Slovakia in meeting EU obligations that require an

independent review of national programmes for managing radioactive waste and used fuel. The Artemis team took into account the findings from a September 2022 Integrated Regulatory Review Service (IRRS) mission, which assessed the regulatory framework.

Slovakia's radioactive waste and used fuel originate primarily from four pressurised water reactors at the Mochovce and Jaslovské Bohunice NPPs. The use of radiation sources in agriculture, industry, medicine and research applications

generates limited quantities of radioactive waste. JAVYS is responsible for radioactive waste and used fuel management. Used fuel is stored for a few years in reactor pools at the NPP sites before being transported to an interim storage facility in Bohunice. Slovakia also manages used fuel from the past operation of three power reactors as well as radwaste from current decommissioning activities at the Bohunice site. Very-low-level radioactive waste and low-level radioactive waste are being disposed of at a near-surface disposal facility (national radioactive waste repository) at Mochovce. Slovakia plans to develop a geological disposal facility for used fuel and radioactive

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waste not suitable for near-surface disposal.

In their report, the team highlighted progress in decommissioning the V1 Bohunice NPP, scheduled for completion by 2027.

The application of an immediate dismantling strategy combined with the treatment of all materials arising from the decommissioning waste was considered outstanding. The team commended Slovakia on the work to ensure that radioactive wastes are managed in a timely manner and on significant efforts to minimise waste volumes through effective segregation and conditioning.

The team made recommendations for further safety improvements and responsible management. These included that: the government should decide on undertaking further

work on geological disposal; the government should proactively involve interested parties, including the public, in selecting the location for the geological disposal facility; and the National Nuclear Fund should establish

procedures for the timely and regular updating of the national programme for radioactive waste and used fuel management. "Slovakia has established a good basis for the safe and responsible management of radioactive waste and spent fuel as well as for decommissioning," said Artemis team leader Thiagan Pather from the National Nuclear Regulator in South Africa. The final mission report will be provided to the government in two months.

Source: <https://www.neimagazine.com/news/newsiaea-mission-reviews-slovakias-radwaste-management-10648746>, March 03, 2023.

USA

House Panel OKs Bill Opposing Nuclear Waste Storage Plan

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to the creation of the disposal facility and unless the federal government has already created a permanent nuclear waste repository. The Senate has passed the bill, which now goes to the House Judiciary Committee. If it clears that committee,

Senate Bill 53, which would prohibit the storage and disposal of radioactive materials or waste in New Mexico unless the state has agreed to the creation of the disposal facility and unless the federal government has already created a permanent nuclear waste repository.

it will go the floor of the House of Representatives for a final vote. The effort, sponsored by four Democratic lawmakers, is aimed at slowing the efforts of Holtec International from building a proposed storage site

between Hobbs and Carlsbad that would hold highly radioactive uranium from reactor sites around the country.

"I don't want to see New Mexico become the nation's dumping ground [for radioactive waste]," Rep. Matthew McQueen, D-Galisteo, one of the bill's co-sponsors, told committee members. About 25 people testified in support of the bill while about a half-dozen spoke against it, including a lobbyist for Holtec who said the company has already signed memorandums of agreement with community associations and contractors in New Mexico to build a workforce training facility in the

state.

It's unclear what impact the bill, if it becomes law, would have on Holtec's plans. Last year, the U.S. Nuclear Regulatory Commission announced its plans to grant Holtec a license to build and operate the facility. McQueen and co-sponsor Sen. Jeff Steinborn, D-Las Cruces, told the committee the permit has not yet been issued and there is time

to send a statement New Mexico does not want the facility....

Source: https://www.santafenewmexican.com/news/legislature/house-panel-oks-bill-opposing-nuclear-waste-storage-plan/article_9921fdc2-b454-11ed-adbe-db5639732e04.html, February 25, 2023.



Centre for Air Power Studies

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Centre for Air Power Studies

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