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OPINION - Manpreet Sethi

China's Contemporary Nuclear Debates: What's Brewing?

US Department of Defense (DOD) recently released its annual report to Congress offering an assessment of military and security developments in China. On the nuclear front, it proffered two important estimates—China's nuclear stockpile "will at least double in size" from the "low 200s" over the next decade; "China intends to increase the peacetime readiness of its nuclear forces by moving to a launch-on-warning (LOW) posture".

If these assessments prove true, it would mean an abandonment of an expressed nuclear philosophy that has guided China since its first nuclear test on 16 October 1964. Premier Mao had premised deterrence on small numbers sufficient to cause unacceptable damage, and on counter-retaliation that did not require weapons to be on hair-trigger alert. China's White Paper on National Defence released in July 2019 reiterated this posture.

The US, however, contends that China will give up minimalism and defensiveness as its capability advances. President Xi Jinping has indeed shown a propensity for more military ostentation and aggressive postures. Having elevated the PLA

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Rocket Force to the position of the fourth arm of the military alongside the Army, Navy and Air Force, he has described it as the "core strength of China's strategic deterrence, the strategic support for the country's status as a major power, and an important cornerstone safeguarding national security".

Meanwhile, also visible amongst Chinese analysts are debates on China's nuclear strategy and posture. These provide an

insight into contemporary concerns of the nation. Of course, given the nature of the Chinese system, the outsider is allowed to "see" only that which the Party desires. So, what is China signalling?

One debate revolves around whether China should continue to maintain its nuclear forces on low alert levels or move to LOW. Pointing to the combined American military capabilities of missile defence, high-precision long-range missiles, low-yield nuclear weapons, and offensive space and cyber capabilities, China claims they erode the credibility of its deterrence based on a small nuclear arsenal. Hence, the argument to place nuclear forces on low-alert levels to escape destruction before launch. Chinese strategists argue that the outcome of this debate will be determined by how the US shapes its relations with Beijing.

A related issue under discussion is whether China should continue with the strategy of NFU. While most Chinese strategists dismiss need for change, they nevertheless contend that developments in the US are upsetting strategic stability and compelling the country to rethink its NFU commitment. A constructive US-China relationship would reassure Beijing and help it to retain the NFU, just as growing competition would strengthen voices seeking a revision of the doctrine.

Another debate swirls around China's participation in nuclear arms control and whether it should increase nuclear numbers before stepping into any negotiations. Currently, Beijing has rejected such engagement till such time as American and Russian arsenals reduce to its level. An increase in China's own arsenal has also been hinted at. Some Chinese scholars suggest that it is up to the US to find ways to incentivise Beijing to engage in arms control.

Evidently then, in all ongoing nuclear deliberations, Chinese analysts place the onus of the future nuclear trajectory of their country on developments that take place in the United States and on their

bilateral relations. By following this approach, China makes the US a stakeholder in its nuclear behaviour. This is an intelligent strategy of deflecting criticism for personal actions, or inactions, by abdicating own responsibility for nuclear decisions.

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This game is being played between China and the US. Given the American approach to nuclear deterrence, which is premised on large arsenals maintained for first use on hair-trigger readiness, it is not surprising that they conclude that current Chinese articulations are indicative of imminent changes. However, considering the similarity in Chinese and Indian practice of nuclear deterrence, New Delhi should make its own assessment of what these debates signal.

While India needs to watch the developments carefully, it need not rush into making worst-case assumptions about China's nuclear strategy. In fact, even if China abandons its positions under influence of Western concepts or because it now has the means to do so, it should be no reason for India to blindly follow suit.

It is inevitable that numbers in the Chinese arsenal will grow owing to its deployment of missiles which can carry multiple warheads. Beijing finds this necessary to defeat American missile defences, and it has the fissile material to undertake this

expansion. But it is unlikely that China will alter its NFU or alert levels. Both these postures allow it to maintain a high moral ground on nuclear issues and put others on the defensive. Also, Beijing has adequate confidence in its second-strike capability to effectively signal certainty of nuclear retaliation. It will continue own efforts to buttress these, including through development of asymmetric capabilities. Meanwhile, it will continue to chastise American capability build-up for posing a threat to its nuclear deterrence. This will buy it time to evade participation in nuclear arms control till it wants to engage. And, it will be able to play the victim.

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fact, even if China abandons its positions under influence of Western concepts or because it now has the means to do so, it should be no reason for India to blindly follow suit. Fortunately, in nuclear deterrence, weapons need not match piece for piece. India needs to retain its focus on measures that ensure a credible nuclear riposte to cause unacceptable damage. This attention should not dither irrespective of China's nuclear behaviour.

Source: Dr. Manpreet Sethi is Distinguished Fellow, Centre for Air Power Studies, New Delhi, SundayGuardianLive, <https://www.sundayguardianlive.com/opinion/chinas-contemporary-nuclear-debates-whats-brewing>, 03 October 2020.

OPINION - Nose Nobuyuki

Why Hypersonic Missiles are Changing the Defense Landscape

Worries in the Defense Community: On June 15, 2020, Defense Minister Kôno Tarô announced the suspension of a ground-based missile defense system that had been scheduled for deployment in Akita and Yamaguchi and was to have been a round-the-clock defense against missile attacks

targeting Japan. The announcement came as a shock to Japan's defense community. On June 18, in response to Kôno's announcement, Prime Minister Abe said the National Security Council would begin "concentrated discussions" on Japan's security strategy in the summer, and aimed to begin implementing the system soon. On June 25, though, Kôno officially announced that plans to deploy the Aegis Ashore ballistic missile system in Akita and Yamaguchi had been shelved.

In response to the decision, a team was formed to review missile defense policy under the auspices of the ruling LDP's Research Commission on National Security. A document entitled "Team Established to Review Missile Defense" was

distributed. Surprisingly, however, the document made no reference to the risks posed by falling booster stages that precipitated the scrapping of Japan's Aegis Ashore plans. Rather, it stressed the declining security situation in the region, saying, "Japan's national security environment is riskier and more uncertain than it was in 2017," when the decision was made to deploy the Aegis Ashore. The authors' concern was evident in the statement, "some nations are developing game-changing new missile technology that is capable of breaching traditional missile defense systems."

Concern about Game-Changing Technology: What was behind the concern expressed in the LDP document? In fact, in 2019, the threat posed to Japan by ballistic missiles suddenly became much more serious.

The Ground Self Defense Force's Aegis Ashore is expressly designed to shoot down ballistic missiles. A ballistic missile is propelled by a rocket engine—once the engine burns out, the missile travels in a parabolic trajectory until it strikes its target. This means that if the missile can be detected and tracked before it reaches its target, and the data processed by a high-performance computer, it is possible to calculate the missile's trajectory and fire an intercepting missile back up that trajectory to shoot down the missile. Ballistic missile defense is built on these assumptions.

According to the Ministry of Defense, the KN-23 short-range ballistic missile, which North Korea tested in May, July, and August, shares outward similarities with the Russian Iskander short-range ballistic missile system in terms of ascent maneuvers, use of low earth orbits to avoid radar detection, stealth design with a reduced radar signature, and maneuvering during the terminal phase. The Russian Iskander missile that the Ministry of Defense is referring to is likely to be the 9M723.

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Noting that the North Koreans themselves referred to the missile's "low altitude gliding and leaping flight orbit" as being "hard to intercept," the Ministry of Defense inferred in a July 2020 report, "Recent Missile and Nuclear Development of North Korea," that the North Koreans were planning to breach Japan's missile defenses.

While the estimated range of North Korea's KN-23 short range ballistic missile is somewhat insufficient for a strike on Japan, according to the report, this development shows that North Korea is developing a missile that travels in a difficult-to-calculate trajectory and is therefore able to breach Japan's missile defenses.

Russia and China Pick Up the Pace: There's more. On August 2, 2019, the US withdrew from its Intermediate-Range Nuclear Forces treaty with Russia. The INF treaty prohibited the development, production, and deployment of all land-based ballistic and cruise missiles, both nuclear and conventional, having a range from 550 to 5,000 kilometers, and served to reduce the number of Soviet, and later Russian, land-based ballistic and cruise missiles that were able to reach Japan. The ramifications of the treaty's termination are significant.

On February 1, 2019, the Trump administration announced that it would withdraw from the INF Treaty in six months' time. There were two main reasons for the decision. Firstly, the US suspected the Russian SSC-08 cruise missile's range placed it in violation of the INF treaty. Secondly, China, which was never a party to the treaty, possesses a large number of ground-based INF-range weapons. In response to the US announcement, Russian President Vladimir Putin

gave his approval to the development of sea-based cruise missiles, in addition to Kalibr NK ground-based missiles and ground-based hypersonic missiles, with a range of 1,600 kilometers and above. This means that we can no longer rule out the future emergence of not only ballistic missiles, but also cruise missiles, capable of reaching Japan.

It gets worse. On October 1, 2019, the seventieth anniversary of the founding

of the People's Republic of China, DF-17 ballistic missiles tipped with hypersonic glide vehicles, which are believed to have been developed to breach missile defense systems, paraded through Beijing on launchers, as part of China's largest ever military parade. Some believe that the DF-17 has already been deployed. While the DF-17 cannot travel far enough to strike Guam or Hawaii, Japan is well within range.

A New Nuclear Threat: US Strategic Command categorizes the DF-17 as a "strategic nuclear system." Chinese media claim that the hypersonic glide vehicle that sits atop the DF-17 has a maximum altitude of 60 or even 100 kilometers, and after descending from maximum altitude, can glide at altitudes of 60 kilometers and below, which is below the minimum shutdown altitude of the SM-3 Block IIA missile defense system used in the Aegis Ashore. What's more, the HGV carried by the DF-17 can maneuver at hypersonic speeds, making it still harder for the SM-3 Block IIA system to intercept it or shoot it down.

Weapons already developed or deployed by Russia include the Kinzhal hypersonic missile, which can be carried by a modified Tu-22M3 bomber or MiG-31 fighter jet, the Zircon

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hypersonic missile, which can be launched from warships and submarines, and the Avangard hypersonic glide vehicle, which is carried by the SS-19 intercontinental ballistic missile.

In another section, the LDP document "Team Established to Review Missile Defense" says: "As China and Russia develop hypersonic weapons, North Korea is testing missiles capable of travelling at lower altitudes than conventional ballistic missiles, and on irregular trajectories.... Defending against attacks from not only ballistic missiles, which have been the focus of traditional missile defense, but also the new threat posed by the hypersonic cruise missile, is a matter of urgency." The team's alarm at the current situation is transparent.

Hypersonic Glide Vehicles

Explained: Just what are these hypersonic weapons that China and Russia are developing? Hypersonic refers to speeds above Mach 5 (five times the speed of sound, or over 6,100 kilometers per hour), and a hypersonic weapon is one that travels at above Mach 5 and is capable of irregular maneuvers, as opposed to the simple parabolic trajectory of a ballistic missile. Hypersonic weapons are currently broadly categorized into glide vehicles and cruise missiles.

Like ballistic missiles, hypersonic glide vehicles are launched by rockets. Once the rocket stages have finished burning and separated from the vehicle, the vehicle does not propel itself, but rather acts as a hypersonic glider containing explosives. Being a glider, it is capable of various maneuvers: rather than travelling in a simple parabolic arc, the HGV can execute less predictable trajectories. Because of this, it is expected that it will be extremely difficult to predict the down range of such vehicles, even when tracking sensors are used.

Hypersonic cruise missiles, meanwhile, are able

to change their trajectories while maintaining hypersonic velocities, generally by using ramjet engines, and are therefore also difficult to shoot down with traditional antiballistic missile systems, due to the difficulty of predicting their course.

In short, Aegis Ashore was no longer a viable defense. The details of this system, which was to be the crux of Japan's ballistic missile defenses and a response to the North Korean ballistic missile threat, were agreed upon no later than 2018. But the missiles subsequently developed by North Korea, which aim to breach missile defenses by executing irregular maneuvers, and the hypersonic weapons deployed by Russia and China meant that in the space of a year, the missile situation in the region progressed beyond what Aegis Ashore could cope with.

Joining Forces with the

United States: On August 4, after over a month of discussion, the LDP project

team submitted its "Proposal for Enhanced Deterrents to Protect the Japanese Public" to the government. The proposal called for a new system able to replace Aegis Ashore, alongside further advances in ground-based radar and anti-aircraft missile capabilities and cooperation with US integrated air and missile defense. This would combat the increase and diversification of air-based threats, including hypersonic weapons and swarming drones, and would deploy constellations of low-orbit satellites and endurance drones capable of lengthy times in the air to identify and pursue hypersonic weapons.

While nothing in the proposal gives the reader any concrete idea about what will replace Aegis Ashore, it is notable that the government is explicitly considering a constellation of low-orbiting satellites to identify and track hypersonic missiles that travel at lower altitudes than ballistic missiles on irregular trajectories, as opposed to

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the current US early warning systems, based on geostationary satellites, that are designed to track ballistic missiles. This may be a reference to the United States' new Hypersonic and Ballistic Tracking Space Sensor program, which aims to establish a new early warning satellite system for the identification and tracking of hypersonic missiles.

Are Preemptive Strikes Back on the Table? The ability to identify and track hypersonic missiles using a constellation of low-orbiting

satellites may, as well as making it possible to shootdown hypersonic missiles, help give advance warning of missile strikes, enabling residents to evacuate. It could also allow Japan to ascertain where missiles are fired from, and by whom. But what do we do with this information? The LDP proposal contains this interesting phrase: "Japan should bolster its deterrent capabilities within the scope allowed by the Constitution . . . including by acquiring the capability to prevent ballistic missiles from striking other countries' territories as well, in keeping with the principle of a strictly defensive security policy."

While the possibility of acquiring the military capability to wage attacks on enemy bases has been debated by the LDP in the past as well, Japan's agreements with the United States, under which Japan is required to assume the role of defensive "shield" and leave offensive actions to the United States, mean that Japan never acquired such capability. However, in response to the ruling party's new direction, the National Security Council is currently debating this issue, making amendments to the security strategy that underpins Japan's foreign relations and defense

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policies, and revising the underlying policy principles that form the guidelines for the deployment of Japan's defensive capability. The government is expected to announce its direction on the matter as early as the autumn of 2020.

Just what kind of direction will the government announce in the face of East Asia's rapidly growing missile threat? I am following with interest not only the government's policy on hypersonic missiles but also its policy on Japanese capabilities to

prevent ballistic missile strikes through actions in the territory of the country launching them.

Source: Translated from Japanese. Nippon.com, <https://www.nippon.com/en/in-depth/d00613/>, 12 October 2020.

OPINION - Geoff Lamear

Snapback won't Stop a Nuclear Iran, but it does Stop Diplomacy

With the latest threat to abandon the U.S. embassy in Baghdad over Iranian proxies attacks, the U.S. needs to reexamine its sanctions campaign against Iran. The Trump administration instituted unilateral sanctions recently to enforce "Snapback," a resumption of restrictions on arms sales to Iran after the U.S. was unable to gain approval from the UN Security Council in August. As stated by Treasury Secretary Steven Mnuchin, the goal is "to stop Iran's nuclear, ballistic missile, and conventional weapons pursuits." But these sanctions, whether under dubious international legal premises, or unilateral sanctions by the Treasury and State departments, don't promote the stated end of preventing

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aggression and nuclear proliferation.

Under UNSCR 2231, which stipulates arms sale restrictions and limits on Iranian nuclear activities, states agreed to limit Iran's nuclear activities as well as its military imports. UNSCR 2231 lists expiration dates for these restrictions at the five, eight, and ten-year marks. Having just arrived at the first expiration date, what are the stakes?

First, per the resolution, Iran can now purchase most conventional military weapons, including tanks, military aircraft, and notably after this year's U.S.-Iran showdown, missile systems. Is this a cause for concern? No. Iran's entire military strategy focuses on unconventional warfare — d o m e s t i c a l l y -manufactured missiles, proxy forces such as Hezbollah, and speedboats. With its relatively modest military spending, Iran has to be selective in what it spends on. As Secretary of State Michael Pompeo once speculated, Iran's budget can't accommodate purchasing multiple divisions of Chinese tanks.

But even if Iran were to purchase outside arms, this is something which we should want a "normal country" to do. A more conventionalized Iranian military would be easier to deter and decrease the incidence of proxy attacks, which nearly caused a war this year. Unlike its proxies, Iran has physical hard targets that can be hit, and can't feign ambiguity over the command-and-control of its own armed forces. Snapback sanctions would force Iran to remain an abnormal country.

Second, UNSCR 2231 is still adequate to stop an Iranian nuclear threat without resorting to Snapback. The provisions block Iran from receiving anything that "could contribute to the development of nuclear weapon delivery

systems" until 2023. In other words, nothing Iran could purchase would aid it in creating a usable nuclear weapon. Despite recent violations of the nuclear deal, Iran is still allowing inspectors of the IAEA to monitor Iranian nuclear activities— inspections that are not slated to stop for another 10-20 years. Forcing obsolete sanctions on conventional weapons doesn't get Iran back into compliance with the deal, and it doesn't increase the technical difficulties in obtaining a nuclear weapon.

There's little upside to triggering Snapback. What are the downsides? For one, diplomatic isolation.

In the most recent UNSC vote, only the Dominican Republic sided with the U.S., while the rest of the UNSC sided against it. Germany, Britain, and France delivered a harsher rebuke of U.S. snapback, noting that as a nonparticipant in the nuclear deal, the U.S. procedural maneuvers are "incapable of having legal effect." Likewise, the UN Secretary-General stated the UN would not support sanctions without UN

Security Council support.

While aggravating U.S. allies is a downside not worth overlooking, the even more crucial aspect is what effect snapback would have in future U.S.-Iran relations. As both Biden and Trump claim to want, bringing Iran back to the negotiating table is harder when U.S. diplomacy is wielded exclusively as a means of coercion. And this isn't lost on Iranians, either. A 2018 University of Maryland poll found that only 1.4 percent of Iranians supported further nuclear concessions if the U.S. pulled out of the Iran deal. With the hardliner wing trouncing the moderate wing in Iranian elections, this anti-moderate swing has become a reality, and the prospect of diplomacy is looking increasingly precarious. Snapback won't help make the return to diplomacy any easier.

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Fixing U.S. policy with Iran cannot be accomplished overnight. But the latest iteration of sanctions will not assist the U.S. in accomplishing any of its policy goals. If we want a non-nuclear and peaceful Iran, treading down the same coercive diplomacy path is not the way to accomplish that. Two years of Maximum Pressure have only made the prospect of war more likely, the prospect of a nuclear Iran more likely, and the path to peace more difficult. Snapback is just a callback to another failed strategy.

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Source: Geoff LaMear is a Boren scholar at the University of Chicago and currently a Marcellus Policy Fellow at the John Quincy Adams Society. The Hill, <https://thehill.com/opinion/international/519793-snapback-wont-stop-a-nuclear-iran-but-it-does-stop-diplomacy>, 06 October 2020.

OPINION - Adam Thomson, Goran Svilanović, Ahmet

Why P5 Strategic Risk Reduction is Critical for Reinvigorating the NPT

Against the background of growing international tensions, persisting deadlocks in disarmament talks, and growing frustration amongst non-nuclear weapon states, the international community is looking to the five recognized nuclear weapon states under the NPT – China, France, Russia, the United Kingdom, and the United States – for action. Under current circumstances, a feasible option for the P5 represents the launch of a regular, sustained, and open-ended dialogue on strategic risk reduction. Such a dialogue could take place within a permanent working group entirely committed to the issue, which will

Under current circumstances, a feasible option for the P5 represents the launch of a regular, sustained, and open-ended dialogue on strategic risk reduction. Such a dialogue could take place within a permanent working group entirely committed to the issue, which will improve global strategic stability and create a constructive working environment for the next NPT Review Conference.

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The Global Nuclear Order: Historic Responsibilities and Current Challenges:

The year 2020 marks a landmark for the history, present and future of the global nuclear order which now stands at a crossroads. Three anniversaries have reminded the P5 this year of the unique historic and humanitarian responsibilities their status comes with: 75 years have passed since the first and last nuclear warheads detonated in the cities of Hiroshima and Nagasaki. Half a century ago, in an unparalleled effort to contain the risk of nuclear weapons proliferating in an unstable international system, the NPT was ratified. And only 25 years separate us from when the NPT was extended indefinitely in anticipation of tangible disarmament by the P5.

25 years later and the world has taken several steps backwards. With the erosion of the INF Treaty and the potential expiration of New START, the nuclear age has entered a new stage that is characterized by frozen dialogues on arms control and disarmament. The malaise causing these major setbacks lies in the strained geopolitical environment and the mistrust about intentions that prevails amongst P5 members, hindering the P5 to collectively live up to their commitments under the NPT, especially with regard to the second pillar of disarmament.

Frustrated with the P5’s failure to pursue disarmament, more and more non-nuclear weapon states have embraced the Treaty on the Prohibition of Nuclear Weapons (TPNW). At the time of writing, the TPNW misses only six ratifications to enter into

force. Somewhat ironically, the TPNW represents the single issue that unifies all the five NPT nuclear-weapon states in joint opposition. This is emblematic for the profound estrangement between nuclear and non-nuclear states and the extent to which the decoupling of narratives between epistemic nuclear policy communities has progressed.

Enter the Covid-19 pandemic, which has unleashed a state of instability across the world and revealed the economic and political cost stemming from the current lack of international cooperation and leadership. Covid-19 quickly overshadowed cooperation on nuclear issues and led to a renewed escalation between some P5 members, with the side-effect that the prospect of P5 cooperation is at an all-time low. However, the Covid-19 crisis has also forced the postponement of the 10th NPT Review Conference. Although regrettable, this has granted policymakers more time to think about ways out of the deadlock.

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Strategic Risk Reduction as a Way out of the Deadlock: In the near future, it is evident that nuclear-weapon states are not ready for disarmament and mutual concessions due to mistrust about intentions, rather they have hardened their nuclear deterrence postures and modernized their nuclear arsenals. Yet, at this point, inaction is not an option. An effort is needed by the P5 to reassure non-nuclear-weapon states about their NPT commitments. At the same time, the P5 must engage in a conversation about the dangerous misperceptions the P5 hold about each other's nuclear intentions. To foster global strategic stability, the P5 must complement the ongoing exchanges on nuclear doctrines and address new confidence-building measures.

Engaging the P5 in a regular, sustained, and open-ended dialogue within a permanent working group on strategic risk reduction could achieve just that.

Strategic risk reduction entails measures which, as long as nuclear weapons exist, prevent and reduce the risk of their intended or unintended use. These measures can range from declaratory nuclear policies, operation policies, and communication and cooperation policies, to agreements that limit the roles, types, and numbers of certain nuclear weapons.

Offering a broad menu of options for discussion allows the P5 to leave aside issues of great military concern and explore less-politicized areas of common interest, as well as to anticipate emerging risks emanating from new technologies such as artificial intelligence. Where more sensitive issues are concerned, clarifying them – as a P5 dialogue on strategic risk reduction would enable – could reduce key risks of miscommunication by providing a greater degree of precision on other states' thinking.

Other international initiatives, such as Creating an Environment for Nuclear Disarmament and the Stockholm initiative, have already begun work on the topic. Strategic risk reduction also features highly on the Agenda for Disarmament and in a number of intergovernmental processes. While the P5 themselves have signalled their interest in the issue, they have so far stopped short of engaging in a sustained dialogue on it that could result in tangible strategic risk reduction measures.

The next logical step is to take up and streamline these existing efforts in a regular and sustained dialogue that is entirely committed to strategic risk reduction and conducted within a forum where the participating states have the competencies to transform words into deeds.

Paving the Way for a Successful NPT Revcon: The P5 process is the right platform to launch such a dialogue. At this critical time, it would help the P5 to stabilize a volatile international security

environment, build new strategic trust between one another and gain reputational benefits through an issue in which many non-nuclear-weapon states have expressed an interest. But it also poses an opportunity for the P5 to reinvigorate the P5 process and discover new avenues for cooperation to enhance strategic stability.

While establishing such a dialogue will not fully assuage TPNW supporters' concerns about the P5's commitment to Article VI of the NPT, P5 strategic risk reduction will send an important signal that the P5 take these concerns seriously. Getting non-nuclear weapon states on board and stimulating new discussions will be crucial if the P5 do not intend to repeat the failure of the 2015 Revcon to agree on a consensus final document in the upcoming Revcon (a consensus final document is the measure of Revcon success).

With the 10th anniversary Revcon approaching, the time is ripe for the P5 to meet their responsibilities and lead the world towards a safer future. Launching a P5 dialogue on nuclear risk reduction marks the first step in the right direction.

The opinions articulated above represent the views of the author(s) and do not necessarily reflect the position of the European Leadership Network or any of its members. The ELN's aim is to encourage debates that will help develop Europe's capacity to address the pressing foreign, defence, and security policy challenges of our time.

Source: *European Leadership Network*, <https://www.europeanleadershipnetwork.org/commentary/why-p5-strategic-risk-reduction-is-critical-for-reinvigorating-the-npt/>, 08 October 2020.

BALLISTIC MISSILE DEFENCE

INDIA

India Test-Fires 10 Missiles in 35 Days. It is not a Coincidence

The DRDO will fire the 800 km range Nirbhay sub-sonic cruise missile, the last for the solid rocket booster missile before its formal induction into the army and the navy, people familiar with the development told *Hindustan Times*. It would be the tenth missile test-firing by India's lead defence research organisation in the last 35 days.

The DRDO's effort to fast-track development of 'Made in India' strategic nuclear and conventional missiles - it has fired a missile every four days over nearly a month - comes against the backdrop of China's refusal to step back from the Line of Actual Control.

China's People's Liberation Army had first clashed with Indian soldiers on the northern bank of Ladakh's Pangong Tso lake on May 5 this year, setting up a stand-off that rapidly expanded to four locations in East Ladakh.

The stand-off escalated into a bloody clash in June that killed soldiers on both sides. It was the first time that the two countries had lost soldiers on this border in four decades. A little less than two months later, shots were also fired when Indian soldiers occupied

the heights on the north bank of the picturesque salt water lake spread across 700 square km.

The two countries have held numerous rounds of negotiations at the level of diplomats, military officials and ministers; another round is

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scheduled. But China has been reluctant to go back to the positions it held before stepping up tensions.

US Secretary of State Mike Pompeo has held up Chinese president Xi Jinping's aggression on the border with India as an example of the Chinese communist party's "bad behaviour". The US estimates China has mobilised about 60,000 troops in depth locations across Ladakh.

Over the next four weeks or so, the DRDO has test-fired the extended-range version of the supersonic cruise missile BrahMos that can blow up targets 400 km away, the nuclear-capable Shaurya supersonic missiles that can travel at twice to thrice the speed of sound; and the supersonic missile assisted release of the torpedo that targets submarines apart from test-firing the laser-guided anti-tank guided missile just 10 days apart.

The DRDO was quietly told to fast-track its missile programme in the early part of the standoff because the Indian government had doubts about China's commitment to peace on the border, a missile expert associated with the projects said.

The Hypersonic Technology Demonstrator Vehicle (HSTDV) was the first one to be fired on 7 September. Over the next four weeks or so, the DRDO has test-fired the extended-range version of the supersonic cruise missile BrahMos that can blow up targets 400 km away, the nuclear-capable Shaurya supersonic missiles that can travel at twice to thrice the speed of sound; and the supersonic missile assisted release of the torpedo that targets submarines apart from test-firing the laser-guided anti-tank guided missile just 10 days apart.

The expedited development and testing has made it possible to deploy the terrain-hugging subsonic Nirbhay missile along the Ladakh border in limited numbers. "The Shaurya missile would be next."

In between, the DRDO also carried out a night trial of the nuclear-capable ballistic missile Prithvi-II, the surface-to-surface missile capable of attacking targets at a range of 300 km. It is India's first indigenous surface-to-surface strategic missile.

The expedited development and testing has made it possible to deploy the terrain-hugging subsonic Nirbhay missile along the Ladakh border in limited numbers. "The Shaurya missile would be next" an official said about the new-age weapon that

can carry a nuclear warhead weighing around 200 kg and flies at 2.4 km per second. The government has cleared its induction into the military. The Indian Strategic Forces Command will decide locations of its deployment under guidance from the National Security Council.

Source: Shishir Gupta, Hindustan Times, <https://www.hindustantimes.com/india-news/india-races-to-upgrade-its-armoury-fires-a-missile-every-4-days/story-UB5RQaMY4z>

VITIYbNFR8EL.html, 10 October 2020.

JAPAN

Japan Vows to Boost Missile Defense after North Korea Parade

Japan vowed to bolster its missile deterrence capability to respond to threats by North Korean weapons that are becoming 'more diverse and complex,' as displayed during Pyongyang's military parade over the weekend. North Korea, marking the 75th anniversary of its ruling party, paraded a variety of weapons systems, unveiling what appeared to be an intercontinental ballistic missile that is larger than any of the North's known ICBMs.

It also displayed what was likely an upgraded version of a missile that can be fired from submarines. While some experts say the weapons could have been mock-ups of missiles under development, the exhibits appear to signify North Korea's continuous upgrading of its weapons capabilities during stalled nuclear diplomacy with the US.

"In order to respond to threats that are diversifying and complex, we will firmly work to strengthen our comprehensive missile deterrence capability," Chief Cabinet Secretary Katsunobu Kato told a regular news conference. "We understand that

some of those missiles are said to make it difficult for us to respond with our conventional equipment." Kato declined to give details on Japan's analysis of the missiles displayed by North Korea.

He said only that Japan would continue to cooperate with the US and other concerned countries to protect the Japanese people. Under the nearly eight-year tenure of hawkish former Prime Minister Shinzo Abe, Japan expanded its military's international role under the Japan-US alliance, amid growing threats from North Korea and China.

Tokyo has repeatedly called the two countries threats to its regional security, and is currently studying a major change to its missile deterrence policy that would include the possibility of developing a first-strike capability on enemy bases to defend against imminent attacks. Abe's successor, Yoshihide Suga, and his government are expected to compile a new missile plan later this year.

Source: Financial Express, <https://www.financialexpress.com/defence/japan-vows-to-boost-missile-defense-after-north-korea-parade/2103683/>, 12 October 2020.

NORTH KOREA

North Korea Unveils 'Monster' New ICBM at Parade

North Korea unveiled previously unseen intercontinental ballistic missiles at an unprecedented predawn military parade that showcased the country's long-range weapons for the first time in two years. Analysts said the missile, which was shown on a transporter vehicle with 11 axles, would be one of the largest road-

mobile ICBMs in the world if it becomes operational. "This missile is a monster," said Melissa Hanham, deputy director of the Open Nuclear Network.

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could use the event to unveil a new "strategic weapon" as promised earlier this year.

A senior U.S. administration official called the display of the ICBM "disappointing" and called on the government to negotiate to achieve a complete denuclearization. The parade featured North Korea's ballistic missiles for the first time since Kim began meeting with international

leaders, including U.S. President Donald Trump, in 2018.

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The U.S. official said Washington was holding fast to four commitments made by Trump and Kim at their historic meeting in June of that year, including a pledge by Pyongyang to "work toward complete denuclearization of the Korean peninsula." Kim

made no direct mention of the United States or the now-stalled denuclearization talks. "We will continue to build our national defence power and self-defensive war deterrence," Kim said, but vowed that the country's military power would not be used preemptively.

Kim blamed international sanctions, typhoons, and the coronavirus for preventing him from delivering on promises of economic progress. "I am ashamed

that I have never been able to repay you properly for your enormous trust," he said. "My efforts and devotion were not sufficient to bring our people out of difficult livelihoods."

The video showed Kim make an appearance as a clock struck midnight. Dressed in a grey suit and tie, he waved to the crowd and accepted flowers from children while surrounded by military officials in Pyongyang's recently renovated Kim Il Sung Square. Kim spoke for nearly half an hour, often visibly sweating despite the cool morning air, shedding tears when thanking the troops, and smiling and laughing as he watched the missiles.

The parade was highly choreographed, with thousands of troops marching in formation, displays of new conventional military equipment including tanks, and fighter jets launching flares and fireworks. Experts said that the new, larger ICBM is likely designed to carry MIRVs, allowing it to attack more targets and making interception more difficult.

Michael Elleman, director for Non-Proliferation and Nuclear Policy at the IISS, estimated on Twitter that the new large missile could potentially deliver 2,000-3,500 kg "to any point on CONUS," making it more capable than Soviet R-16 or R-26 ICBMs that were never deployed. The new ICBM is likely intended to dispel doubts about North Korea's ability to strike the continental United States, and an implicit threat that they are preparing to test the larger missile, said Markus Garlauskas, a former U.S. intelligence officer for North Korea. "If the Hwasong-15 could carry a 'super-large' nuclear warhead to anywhere in the U.S., then the natural question is what can this larger missile carry?" he said.

Pyongyang is widely expected to test the larger missile in coming months, said Riki Ellison,

founder of the non-profit Missile Defense Advocacy Alliance, sending a message to both Trump and his Democratic challenger Joe Biden....

Coronavirus Measures: Kim became visibly emotional as he thanked the troops for their sacrifice in responding to natural disasters and preventing a coronavirus outbreak. He said he was grateful that not a single North Korean had tested positive for the disease, an assertion that South Korea and the United States have previously questioned.

While attendees at other celebratory events were shown wearing masks, no one at the parade

appeared to be wearing them. Kim said he hoped that North and South Korea would join hands again when the global coronavirus crisis is over.

South Korean officials said that Kim could use the event as a "low intensity" show of power ahead of the U.S. presidential election on Nov. 3, as denuclearisation talks with Washington have stalled. In

a congratulatory message to Kim for the anniversary, Chinese President Xi Jinping said he intended to "defend, consolidate and develop" ties with North Korea, its state media said.

Source: Reporting by Hyonhee Shin and Josh Smith, Reuters, <https://in.reuters.com/article/northkorea-missiles-kim/north-korea-unveils-new-intercontinental-ballistic-missile-at-military-parade-idINKBN26VOHA?il=0>, 10 October 2020.

RUSSIA

Russia Reports Successful Test Launch of Hypersonic Missile

Russian President Vladimir Putin hailed the successful test launch of a new Zircon hypersonic cruise missile as a "big event" for the country. Speaking to Putin via a video call, Russian General Staff chief Valery Gerasimov said the test launch

The new large missile could potentially deliver 2,000-3,500 kg "to any point on CONUS," making it more capable than Soviet R-16 or R-26 ICBMs that were never deployed. The new ICBM is likely intended to dispel doubts about North Korea's ability to strike the continental United States, and an implicit threat that they are preparing to test the larger missile, said Markus Garlauskas, a former U.S. intelligence officer for North Korea.

took place from the Admiral Groshkov frigate located in the White Sea, in the north of Russia. The missile successfully hit a target in the Barents Sea, he added.

“Equipping our armed forces — the army and the navy — with the latest, truly unparalleled weapon systems will certainly ensure the defense capability of our country in the long term,” said Putin, who was celebrating his 68th birthday. In 2019, Putin had said the Zircon would be capable of flying at nine times the speed of sound and have a range of 1,000 kilometers (620 miles).

Source: Associated Press, Defence News, <https://www.defensenews.com/global/europe/2020/10/07/russia-reports-successful-test-launch-of-hypersonic-missile/>, 07 October 2020.

NUCLEAR ENERGY

CHINA

China Launches CAP1400 Reactor Design

The CAP1400 is an enlarged version of the AP1000 pressurised water reactor developed from the Westinghouse original, with consulting input from the USA-based company. Zheng Mingguang, SPIC’s chief engineer and the main designer of the CAP1400, told reporters that development of the reactor had successfully broken a number of “technological monopolies” with, for example, the main pumps, valves, pressure vessels, steam generators, reactor internals, control rod drive mechanisms, large forgings, nuclear-grade welding materials, 690 U-shaped pipes and other key equipment. All the key materials have achieved “independent design and localised manufacturing”, with the overall localisation rate of equipment reaching more than 90%. Once mass production of the CAP1400 starts, the project cost can be reduced by about 20%, he said.

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In September 2014, the Chinese nuclear regulator approved the preliminary safety analysis report of the CAP1400 design following a 17-month review.

Construction of two demonstration CAP1400 units is under way at Huaneng Group’s Shidaowan site in Shandong province. SPIC noted the construction design of the CAP1400 demonstration project is now 99.2% complete.

SPIC is promoting the Guohe One brand for export and is discussing potential partnerships with countries including Turkey and South

Africa, Hao Hongsheng, general manager of SPIC’s nuclear energy department, told the Global Times. He said the technology will be competitive in the global market with a relatively high degree of safety and low costs.

In May 2016, the CAP1400 design successfully passed the International Atomic Energy Agency’s Generic Reactor Safety Review. This review is not a clearance process but a review of the quality of the safety documents identifying strengths, weaknesses and gaps. International use of the CAP1400 is still dependent on meeting country-specific standards and requirements, but passing the IAEA safety review will make this process easier.

Sources: World Nuclear News, <https://world-nuclear-news.org/Articles/Large-scale-Chinese-reactor-design-officially-laun>, 29 September 2020.

GENERAL

IEA and IAEA Chiefs Stress Role of Nuclear in Climate Emergency

Low-carbon electricity generation will need to triple by 2040 to put the world on track to reach energy and climate goals and it is very difficult to see how this can be done without a considerable contribution from nuclear power, they wrote.

“Some nuclear projects in Europe and North America, where 20% of electricity comes from nuclear, have been plagued by financial and project

management difficulties. But China, India and the United Arab Emirates are among countries with successful new-build programmes. In some countries, nuclear power plants that could have operated for years to come were shut down because of policy decisions by governments or unfavourable market conditions. In many of those cases, fossil fuels filled a considerable part of the gap in the power supply, increasing the emissions challenge we now face," they wrote.

Countries that envisage a role for nuclear in their clean-energy mix account for a large proportion of global energy use and emissions and, for the governments of these countries, Birol and Grossi recommend three main priorities: preserve, renew and innovate.

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The lifetimes of most reactors can be extended to 60 years, safely and cost effectively, which would provide valuable time for scaling up new low-carbon electricity projects, they wrote, but even with lifetime extensions for existing nuclear plants, new ones will need to be built, and governments could proactively support the financing of the high initial costs through long-term contracts, capital guarantees and direct investment. New nuclear power technologies, such as small modular reactors and advanced large reactors, offer operational and safety advantages, require less upfront investment, and will be easier to integrate into electricity systems, they added.

"Today's historically low interest rates provide a unique opportunity for funding investment in nuclear power and other clean energy technologies. This opportunity should not be missed," they wrote.

Source: *World Nuclear News*, <https://www.world-nuclear-news.org/Articles/IEA-IAEA-chiefs-stress-role-of-nuclear-in-climate>, 12 October 2020.

NETHERLANDS

Netherlands Revives Nuclear Power Prospects

After years of official indifference and the closure of a 55 MWe demonstration reactor after 29 years operation, the Dutch government is reconsidering the virtues of nuclear power. The Minister for Economic Affairs and Climate Policy has submitted a commissioned report by consultants Enco to the Dutch parliament,

pointing out that "nuclear energy is no more expensive than wind and solar if the system costs are included" as they ultimately need to be. He said that nuclear is one of the most cost-effective options for reliable CO₂-free electricity after 2030, and also "the safest way of producing energy per terawatt hour".

The Enco report says that "the main hurdle nowadays remains the economics of new nuclear power", but that experience in China shows that plants can be built on time and to budget. Small and medium-sized reactors "allow a more incremental" investment than do large-scale plants. The country's 482 MWe

Borssele reactor continues to provide reliable power, as it has since 1973. A second and larger unit at the site has been proposed.

Sources: *Excerpted from Weekly Digest, World Nuclear Association, 25 September & 02 October 2020.*

PAKISTAN

Pakistan's Chashma 4 Officially Accepted

Chashma unit 4 was connected to the grid on 29 June, 2017. The Chinese-supplied pressurised water reactor (PWR) is the second of two CNP-300 units to enter service at the site, following

unit 3 which entered commercial operation in December 2016. The Chashma site - also referred to as Chasnupp - is home to two Chinese-supplied 300 MWe PWRs as well: unit 1, in commercial operation since 2000, and unit 2, since 2011.

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For the final acceptance ceremony, held at Chashma on 23 September, CNNC set up video connections at construction subsidiary China Zhongyuan Engineering Company's headquarters in Beijing and at the PAEC headquarters in Islamabad. Participants in the ceremony included PAEC Chairman Muhammad Naeem and CNNC President Gu Jun.

CNNC said China and Pakistan have maintained a strong partnership in the nuclear power sector since the two countries signed an agreement in 1986 to facilitate the transfer of civil nuclear technology.

Regarding future cooperation, Gu Jun said: "CNNC will, as always, assist Pakistan in the operation and maintenance of its plants, provide full-life and full-service services, and commit to providing clean, efficient and safe energy to the Pakistani people."

Pakistan also has a 125 MWe Canadian-supplied pressurised heavy water reactor, Karachi unit 1, which has been in commercial operation since 1972. Two 1161 MWe Chinese-supplied Hualong One (HPR1000) plants are under construction as units 2 and 3 of the Karachi plant. Construction of unit 2 began in 2015 and unit 3 in 2016. The units are scheduled for commercial operation in 2021 and 2022, respectively.

In November 2017, CNNC and PAEC signed a

cooperation agreement on the construction of a Hualong One reactor as unit 5 of the Chashma plant.

Sources: World Nuclear News, [https://www.world-nuclear-news.org/Articles/Pakistans-Chashma-4-officially-accepted#:~:text=A %20ceremony%20has % 20been % 20held,fourth% 20overseas% 20nuclear%20power% 20unit,28 September 2020.](https://www.world-nuclear-news.org/Articles/Pakistans-Chashma-4-officially-accepted#:~:text=A%20ceremony%20has%20been%20held,fourth%20overseas%20nuclear%20power%20unit,28%20September%202020)

NUCLEAR COOPERATION

USA-ROMANIA

Romania, U.S. to Sign Cooperation Agreements over Nuclear Reactors

Romania's economy ministry will sign cooperation and financing agreements with the United States regarding the construction of two nuclear reactors at its plant on the river Danube, U.S. ambassador Adrian Zuckerman said. Romanian state-owned nuclear power producer Nuclearelectrica ended talks with China General Nuclear (CGN) about the construction of the two reactors in June after they had dragged on for six years.

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The firm has two 706 megawatt reactors, which account for roughly a fifth of Romania's power production, and it wants to add two more. It also needs to refurbish the first unit.

Economy Minister Virgil Popescu will sign an intergovernmental cooperation agreement

with U.S. Energy Secretary Dan Brouillette for the refurbishment and the building of two new units, Zuckerman told a conference.

"This \$8 billion project will be a paradigm for future Romanian-American economic and energy development projects," he said, adding Popescu

will also meet Exim Bank president Kimberley Reed to sign a memorandum of understanding for the financing of the nuclear units and other projects. "The financing package is the largest financing package ever received by Romania to date," he said.

The Romanian government, economy ministry and Nuclearelectrica did not immediately respond to requests for comment. Nuclearelectrica had initially planned to build the two reactors in partnership with six European energy firms. Those firms withdrew one by one between 2010 and 2013, feeling the impact of Europe's then debt crisis and project delays.

China's CGN filed a non-binding bid to partner with Romania in the project in 2014, but the negotiations, which included price guarantees, had progressed only very slowly. Nuclearelectrica, in which Romania's economy ministry has an 80% stake, has a market capitalisation of 4.95 billion lei (\$1.20 billion).

Source: Reporting by Luiza Ilie; Editing by Hugh Lawson, Reuters, <https://www.reuters.com/article/us-romania-nuclearelectrica/romania-u-s-to-sign-cooperation-agreements-over-nuclear-reactors-idINKBN26T3GK>, 09 October 2020.

NUCLEAR PROLIFERATION

IRAN

U.S. Imposes New Iran Sanctions that may Spook European Banks

The United States slapped fresh sanctions on Iran's financial sector, targeting 18 banks in an effort to further choke off Iranian revenues as

Washington ramps up pressure on Tehran weeks ahead of the U.S. election.

The move freezes any U.S. assets of those blacklisted and generally bars Americans from

dealing with them, while extending secondary sanctions to those who do business with them. This means foreign banks risk losing access to the U.S. market and financial system.

The Treasury Department said in a statement the prohibitions did not apply to transactions to sell agricultural commodities,

food, medicine or medical devices to Iran, saying it understood the need for humanitarian goods.

However, Iranian Foreign Minister Mohammad Javad Zarif accused the United States of targeting Iran's ability to pay for basic necessities during the COVID-19 pandemic.

"U.S. regime wants to blow up our remaining channels to pay for food & medicine," Zarif said on Twitter. "Conspiring to starve a population is a crime against humanity."

Iranian Central Bank governor Abdolnaser

Hemmati dismissed the sanctions as political propaganda and played down their practical impact. "Rather than having any economic effect, the American move is for U.S. domestic propaganda and political purposes, and shows the falsity of the human rights and humanitarian claims of U.S. leaders," Hemmati said in a statement.

Analysts said the secondary sanctions may further deter European and other foreign banks from working with Iran, even for permitted humanitarian transactions. "It's like a punch in the face to the Europeans, who have gone out of

Iranian Central Bank governor Abdolnaser Hemmati dismissed the sanctions as political propaganda and played down their practical impact. "Rather than having any economic effect, the American move is for U.S. domestic propaganda and political purposes, and shows the falsity of the human rights and humanitarian claims of U.S. leaders," Hemmati said in a statement.

It's like a punch in the face to the Europeans, who have gone out of their way to indicate to the Americans that they view it as being extremely threatening to humanitarian assistance or humanitarian trade going to Iran," said Elizabeth Rosenberg of the Center for a New American Security think tank.

their way to indicate to the Americans that they view it as being extremely threatening to humanitarian assistance or humanitarian trade going to Iran," said Elizabeth Rosenberg of the Center for a New American Security think tank.

"They also want ... to make it very difficult for any future president to be able to unwind these measures and engage in nuclear diplomacy," Rosenberg added, alluding to the possibility that Democratic candidate Joe Biden could defeat Republican President Donald Trump in the Nov. 3 U.S. election. Biden, who was vice president when the Obama administration negotiated the nuclear accord, has said he would rejoin the deal if Iran first resumed compliance with it.

Tensions between Washington and Tehran have soared since Trump unilaterally withdrew in 2018 from the 2015 Iran nuclear deal struck by his predecessor and began re-imposing U.S. sanctions that had been eased under the accord.

The sanctions Trump has reinstated target everything from oil sales to shipping and financial activities. While they exempt food, medicine and other humanitarian supplies, many foreign banks are already deterred from doing business with the Islamic Republic - including for humanitarian deals.

Washington's latest move targeted what the Treasury described as 18 major Iranian banks, which were designated under authorities including U.S. Executive Order 13902, which allows the Treasury Department to target entire sectors of the Iranian economy.

It named them as Amin Investment Bank, Bank Keshavarzi Iran, Bank Maskan, Bank Refah Kargaran, Bank-e Shahr, Eghtesad Novin Bank, Gharzolhasaneh Resalat Bank, Hekmat Iranian Bank, Iran Zamin Bank, Karafarin Bank,

Khavarmianeh Bank, Mehr Iran Credit Union Bank, Pasargad Bank, Saman Bank, Sarmayeh Bank, Tosee Taavon Bank, Tourism Bank and Islamic Regional Cooperation Bank.

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Source: Daphne Psaledakis, Arshad Mohammed, Reuters, <https://in.reuters.com/article/iran-nuclear-usa-sanctions/u-s-hits-irans-financial-sector-with-fresh-round-of-sanctions-idINKBN26T35E>, 09 October 2020.

U.N. Nuclear Watchdog Inspects second Iranian Site as Agreed with Tehran

The U.N. nuclear watchdog has inspected the second of two suspected former secret atomic sites in Iran, as agreed with Tehran last month in a deal that ended a standoff over access, the agency said. The IAEA has not named either of the two undeclared sites but it has described activities it suspects took place there in 2003, the year when it and U.S. intelligence services believe Iran halted a secret and coordinated nuclear weapons programme.

Although the IAEA says it has the power to carry out snap inspections anywhere in Iran it deems necessary, Tehran had denied it access to the two sites for

seven months until the deal was struck for access on specific dates this month.

"As part of an agreement with Iran to resolve safeguards implementation issues specified by the IAEA, the Agency conducted a complementary access at the second location in the country and took environmental samples," the IAEA said in a statement.

Those samples and others taken at the first site will be sent to labs and analysed for traces of nuclear material, since the agency's main task is to account for all nuclear material in a country to ensure it is not being used to make weapons.

Iran denies ever having had a nuclear weapons

programme. It could take several months for the results of the sample analysis to be available. By then the U.S. presidential election will have been held, which should determine whether Donald Trump remains in office and continues to seek to dismantle Iran's 2015 nuclear deal with major powers.

Iran has denounced "attempts to open an endless process of verifying and cleaning-up of ever-continuing fabricated

allegations", strongly suggesting the IAEA was seeking access based on information Israel says it seized from Iran. The IAEA says it verifies all information and takes none at face value.

Source: Reuters Staff, Reuters, <https://in.reuters.com/article/us-iran-nuclear-iaea/u-n-nuclear-watchdog-inspects-second-iranian-site-as-agreed-with-tehran-idUSKBN26L1FW>, 30 September 2020.

NUCLEAR DISARMAMENT

GENERAL

Guterres: Only Way to Remove Nuclear Risk, 'Completely Eliminate Nuclear Weapons'

Secretary-General António Guterres told delegates gathered to commemorate the International Day for the Total Elimination of Nuclear Weapons, it was the only way "to completely eliminate nuclear risk."

And although nuclear disarmament has been a UN priority since its founding 75 years ago, he reminded the plenary meeting that "the world continues to live in the shadow of nuclear catastrophe".

For Security's Sake: Progress towards the total elimination of nuclear weapons has "stalled and is at risk of backsliding", the UN chief warned. Against the backdrop of growing distrust and tension between Nuclear Weapon States (NWS) - and programmes that modernize arsenals for faster, stealthier and more accurate weapons,

with costs Mr. Guterres called "simply staggering" - he said, pointedly, that the only treaty restricting the size of the world's largest nuclear arsenals is set to expire early next year - threatening a return to "unconstrained strategic competition".

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"For the sake of all of our security, the world must return to a common path towards nuclear disarmament", he underscored, adding that it is "imperative" for Russia and the United States to

extend, "without delay", the new Strategic Arms Reduction Treaty (START) for the maximum duration of five years.

Among other things, START calls for halving the number of strategic nuclear missile launchers and establishing a new inspection and verification regime within seven years from the date the treaty enters into force.

The Secretary-General upheld that NWS "have a responsibility to lead", including by honouring their existing commitments and taking steps to reduce nuclear risks. "Especially in today's tense international security environment, with rising friction between major powers, such steps are more necessary than ever", he spelled out.

In conclusion, the Secretary-General advocated for "a strengthened, inclusive and renewed multilateralism built on trust" with human security at its centre, to "guide us to our shared goal of a world free of nuclear weapons".

Stop Wasting Time: Meanwhile, Volkan Bozkir, President of the 75th session of the General Assembly, noted that amidst rising global tensions, the disarmament architecture is "under significant strain". "Parties have withdrawn from nuclear-related agreements and others are set to expire", he elaborated, adding that "some Member States have threatened to restart nuclear testing".

Mr. Bozkir stressed the need to return to "the common goal" of a nuclear-weapons free world weapons and flagged the cornerstone NPT and

Secretary-General's Agenda for Disarmament, as the right tools to achieve it. Noting that this year marks the 50th anniversary of the NPT, the Assembly president urged its States' Parties to use the postponed 2020 NPT Review Conference next year, to renew their commitments and discuss "practical steps in nuclear disarmament". "Nuclear disarmament must remain a priority to all of us", he underscored. "We cannot afford to waste any more time".

Source: UN News, <https://news.un.org/en/story/2020/10/1074532>, 02 October 2020.

INDIA

Nuclear Disarmament can be Achieved through Agreed Multilateral Framework: Shringla at UN

India, which espouses the policy of 'No First Use' against nuclear weapon states, believes that nuclear disarmament can be achieved through agreed multilateral framework and New Delhi is convinced of the need for meaningful dialogue among nations possessing nuclear arms for building trust and confidence, Foreign Secretary Harsh Vardhan Shringla has said.

Addressing the virtual high-level plenary meeting to commemorate and promote the International Day for the Total Elimination of Nuclear Weapons, Shringla said, "India reiterates its long-standing and unwavering commitment to universal, verifiable and non-discriminatory nuclear disarmament leading to the complete elimination of nuclear weapons, in line with the Final Document of the First Special Session of the UN General Assembly on Disarmament (SSOD-1)."

He said India's approach to nuclear disarmament is encapsulated in its Working Paper submitted

to the UN General Assembly First Committee in 2006 and to the Conference on Disarmament in 2007.

"We believe that nuclear disarmament can be achieved through a step-by-step process underwritten by a universal commitment and an agreed multilateral framework. India remains convinced of the need for meaningful dialogue among all states possessing nuclear weapons, for building trust and confidence," Shringla said.

Assembly, noted that amidst rising global tensions, the disarmament architecture is "under significant strain". "Parties have withdrawn from nuclear-related agreements and others are set to expire", he elaborated, adding that "some Member States have threatened to restart nuclear testing.

The foreign secretary reiterated that India accords "high priority" to the Conference on Disarmament as the world's single multilateral disarmament negotiating forum and supports the commencement of negotiations on a Comprehensive Nuclear Weapons Convention at the CD. "Without prejudice to the priority attached to nuclear disarmament, India remains committed to the immediate commencement of negotiations on a Fissile Material Cut-off Treaty in the CD" he said, adding: "India espouses the policy of 'No First Use' against nuclear weapon states and non-use against non-nuclear-weapon states."

India, which espouses the policy of 'No First Use' against nuclear weapon states, believes that nuclear disarmament can be achieved through agreed multilateral framework and New Delhi is convinced of the need for meaningful dialogue among nations possessing nuclear arms for building trust and confidence, Foreign Secretary Harsh Vardhan Shringla has said.

Underlining that India was a key partner in global efforts towards disarmament and strengthening the non-proliferation order, Shringla expressed hope that the high-level event would bring the further focus of the international community on the need to mobilise global will towards a nuclear-weapons-free world.

He said India's annual resolution in the General Assembly on the 'Convention on the Prohibition of the Use of Nuclear Weapons' tabled since 1982, enjoyed wide support and reaffirmed that any use of nuclear weapons would be a violation of the UN Charter and a crime against humanity.

Shringla underlined that mindful of the catastrophic consequences of unintentional or accidental use of nuclear weapons, India has since 1998 tabled an annual resolution in the General Assembly on 'Reducing Nuclear Danger' that calls for immediate

India has since 1998 tabled an annual resolution in the General Assembly on 'Reducing Nuclear Danger' that calls for immediate and urgent steps to reduce the risks of unintentional and accidental use of nuclear weapons, including through de-alerting and de-targeting.

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The high-level event was held on the International Day of Non-violence, which is observed on Mahatma Gandhi's birthday on October 2. It was the final major event of the General Assembly's high-level week.

Quoting Gandhi, who had said: "Whatever you do will be insignificant, but it is very important that you do it", Shringla asserted that it was in this spirit that India was ready to work with other states towards the achievement of the "noble goal of a world free of nuclear weapons".

During the event, UN Secretary-General Antonio Guterres said nuclear disarmament had been a priority of the United Nations since the very beginning of the Organisation's existence. Yet 75 years since the founding of the UN and since the horrific bombings at Hiroshima and Nagasaki, the world continues to live in the shadow of nuclear catastrophe.

"Some states view nuclear weapons as vital to their national security and survival. Unfortunately, progress towards the total elimination of nuclear weapons has stalled and is at risk of backsliding," he said.

The UN chief said that growing distrust and tension between the states that possess nuclear weapons have increased nuclear risks. Guterres urged that "for the sake of all of our security, the world must return to a common path towards nuclear disarmament. States possessing nuclear weapons have a responsibility to lead this

endeavour, including by fulfilling their existing disarmament commitments and by taking practical steps to reduce nuclear risk".

The General Assembly commemorates September 26 as the International Day for the Total Elimination of

Nuclear Weapons. This Day provides an occasion for the world community to reaffirm its commitment to global nuclear disarmament as a priority. It provides an opportunity to educate the public — and their leaders — about the real benefits of eliminating such weapons and the social and economic costs of perpetuating them.

Commemorating this Day at the United Nations is especially important, given its universal membership and its long experience in grappling with nuclear disarmament issues. It is the right place to address one of humanity's greatest challenges; achieving the peace and security of a world without nuclear weapons, the UN said.

Source: The Tribune, <https://www.tribuneindia.com/news/nation/nuclear-disarmament-can-be-achieved-through-agreed-multilateral-framework-foreign-secretary-shringla-at-un-150397>, 03 October 2020.

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USA-RUSSIA

U.S. and Russia Said Close to Deal on Nuclear Warhead Freeze

U.S. and Russian negotiators have agreed in principle to continue freezing their nuclear warhead stockpiles in a bid to salvage their last remaining arms control pact before it expires next year, a person familiar with the talks said.

The person said it's not yet clear if the agreement for a freeze will succeed or translate into an extension of the New START treaty that expires in February. But, if it works, the person said an agreement could be announced before the Nov. 3

U.S. presidential election with an eye toward extending the accord and eventually bringing China into it, a longtime demand of the administration of U.S. President Donald Trump.

The person said Trump and Russian leader Vladimir Putin have signed off on the freeze, but negotiators still need to iron out details, including compliance and verification issues. The person spoke to reporters after the last round of U.S.-Russia arms control talks in Helsinki.

The person, who was not authorized to discuss the negotiations publicly and spoke on condition of anonymity, said follow-up discussions between Washington and Moscow would take place next week. The Russians have been told that if a freeze is not agreed to in the coming weeks, the United States may harden its conditions.

Word of a potential freeze comes as Trump is seeking foreign policy victories during a difficult re-election campaign against former Vice President Joe Biden, who has vowed to extend New START even without Chinese participation.

An announcement ahead of the election could raise eyebrows, coming as U.S. intelligence officials say Russia favors Trump and has been working to denigrate Biden.

The person familiar with the negotiations said Nov. 3 was not a drop-dead date for a freeze agreement with Russia and stressed that the Trump administration would continue to negotiate no matter what the result of the election. But the person said the U.S. would be looking for additional Russian concessions should negotiations drag out beyond the vote.

Currently, the U.S. envisions a broad cap on nuclear warheads under which the numbers of multiple weapons systems could be adjusted with some flexibility, according to the person.

After the last talks in Helsinki, lead U.S. negotiator Marshall Billingslea, Trump's special envoy for arms control, said the meeting had yielded "important progress." That meeting was a follow up to earlier discussions between Billingslea and his Russian counterpart, Deputy Foreign Minister

Sergei Ryabkov, in Vienna and talks between the U.S. and Russian national security advisers in Geneva.

But Russia has had a more skeptical view of the talks, with Russian Foreign Minister Sergey Lavrov accusing Washington of "unilateralism." He said

the New START treaty would likely cease to exist because the conditions the U.S. has put forward for extending it "don't take into account our interests or the experience of many decades when arms control has existed to mutual satisfaction."

Russian diplomats have repeatedly emphasized that Moscow considers the limits on launch platforms — missiles, bombers and submarines — much more important than the restrictions on the number of warheads. Russia likely would be unwilling to accept a separate freeze on

the number of warheads unless it is part of a full-fledged deal.

Source: *The Japan Times*, <https://www.japantimes.co.jp/news/2020/10/10/world/us-russia-nuclear-warhead-freeze/>, 10 October 2020

It's not yet clear if the agreement for a freeze will succeed or translate into an extension of the New START treaty that expires in February. But, if it works, the person said an agreement could be announced before the Nov. 3 U.S. presidential election with an eye toward extending the accord and eventually bringing China into it.

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NUCLEAR SAFETY

SWITZERLAND

IAEA Director General Discusses Nuclear Safety, Non-Proliferation and Expanding Collaboration in Switzerland

The Swiss government is committed to support the work of the IAEA, with an emphasis on projects that use nuclear technology to help countries meet the UN Sustainable Development Goals (SDGs),

senior Swiss federal officials told IAEA Director General Rafael Mariano Grossi in Bern.

In his meetings with Ignazio Cassis, Head of the Federal Department of Foreign Affairs and Patrizia Danzi, Director General of the Swiss Agency for Development and Cooperation, Mr Grossi introduced new IAEA programmes supporting SDGs such as the Women's Cancers Partnership Initiative, the Marie Sklodowska-Curie Fellowship Programme, which aims to increase the number of women studying nuclear-related subjects at the graduate level, and an upcoming project to combat plastic pollution.

He highlighted ZODIAC, an initiative to prevent and combat future pandemics of zoonotic origin. "COVID-19 will certainly not be the last pandemic which threatens the world. I have therefore proposed a new IAEA Zoonotic Disease Integrated Action project, known as ZODIAC, to establish a global network of national diagnostic laboratories for the monitoring, surveillance, early detection and control of zoonotic diseases, using nuclear or nuclear-derived techniques," Mr Grossi said.

The IAEA's projects are built on the Agency's core expertise and experience as well as on close collaboration with other international and UN organizations, such as the WHO, he said. "Our work has perfect synergies with those of other organizations towards the achievements of the SDGs and we complement each other perfectly," Mr Grossi said.

Mr Cassis and Mr Grossi discussed the IAEA's nuclear verification work, including in Iran. Mr Cassis commended the IAEA for its ongoing nuclear safeguards activities under the travel restrictions in place due to the pandemic.

Nuclear Power, Safety and Security: In meetings with Benoit Revaz, Head of the Swiss Federal Office of Energy and Georg Schwarz, Deputy Director General of the Swiss Federal Nuclear Safety Inspectorate, Mr Grossi and his hosts discussed the Agency's work in nuclear decommissioning and nuclear safety and security.

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"The various safety upgrades at the Beznau Nuclear Power Plant reflect the longstanding Swiss safety culture enshrined in the principle of continuous improvement of nuclear safety," said Mr Grossi at the plant. "We look forward to Switzerland continuing to share this important experience with its international partners."

Swiss officials emphasized the importance of nuclear safety and security and the contribution of the IAEA in these areas by setting international standards and guidance.

In 2018, an IAEA International Physical Protection Advisory Service (IPPAS) nuclear security review mission to Switzerland noted that the country's nuclear security regime is well-established and incorporates the fundamental principles laid out in international agreements. An IAEA Integrated Regulatory Review Service (IRRS) mission is scheduled for 2021 to help the country further strengthen and enhance the effectiveness of its regulatory infrastructure for nuclear, radiation, radioactive waste and transport safety.

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At the Beznau Power Plant, which has been operational since 1969, Mr Grossi talked about the importance of the long-term operation of nuclear power plants as a cost effective way in the transition to clean energy. And when their lifetime comes to an end, reactors need to be decommissioned safely – as Switzerland is planning to do by 2050.

"In the coming years, we will see considerable decommissioning work on power reactors, research reactors and other types of facility. The Agency will work closely with Switzerland on addressing these challenges and share knowledge on waste/spent fuel management," Mr Grossi said.

Joint Research: At the Spiez Laboratory, an IAEA Collaborating Centre in the study of radionuclides in the environment, Mr Grossi and Laboratory Director Marc Cadisch reviewed joint initiatives in marine and terrestrial environmental research and discussed potential collaboration in nuclear forensics and in research into zoonotic diseases. Mr Grossi thanked institute staff for offering to analyse samples collected following last month's blast at the Port of Beirut, collected at a recent IAEA Assistance Mission to Lebanon.

Source: IAEA, <https://www.iaea.org/newscenter/news/iaea-director-general-discusses-nuclear-safety-non-proliferation-and-expanding-collaboration-in-switzerland>, 08 October 2020.

UKRAINE

Ukraine's Government to raise EUR 6 mln to Improve Nuclear Safety

The Cabinet of Ministers of Ukraine adopted a draft order providing for the development of a legal basis for concluding a nuclear safety agreement between the Government of Ukraine and the European Commission.

"The draft act proposes to approve the draft Agreement on the financing of the annual program of actions for cooperation in the field of nuclear safety between the Government of Ukraine and the European Commission, acting on behalf of the European Union," the Government portal informs.

The draft Agreement provides for the

implementation of a project with a budget of EUR 6.6 million (EUR 5.9 million in EU's contribution)

which consists of two parts: the integration of culture of safety and operational efficiency in the field of radioactive waste management in Ukraine and support for an integrated automated system radiation monitoring, covering the entire territory of Ukraine. The beneficiary of the project is the State Agency

of Ukraine on Exclusion Zone Management.

Under the Agreement, the creation of an automated radiation monitoring system will be achieved by integrating existing on-site monitoring systems into a single system and by upgrading obsolete equipment, observation posts and creating of effective information exchange

procedures. Appropriate steps will help expand the capacity to respond to radiological risks in Ukraine and provide early warning to European countries about respective risks.

The Cabinet of Ministers of Ukraine believes that the

signing of the Agreement will contribute to the improvement of safe management of radioactive waste and spent nuclear fuel, as well as environmental rehabilitation of former nuclear facilities.

Source: Ukrainform, <https://www.ukrinform.net/rubric-economy/3107915-ukraines-government-to-raise-eur-6-mln-to-improve-nuclear-safety.html>, 28 September 2020.

NUCLEAR WASTE MANAGEMENT

JAPAN

Controversy over Bids to Host Nuclear Waste Highlights Disposal Issue

Last Friday (9th Oct), the mayor of Sutttsu, Hokkaido, a small town on the west coast of the island, applied for a preliminary survey for a final

At the Beznau Power Plant, which has been operational since 1969, Mr Grossi talked about the importance of the long-term operation of nuclear power plants as a cost effective way in the transition to clean energy. And when their lifetime comes to an end, reactors need to be decommissioned safely – as Switzerland is planning to do by 2050.

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disposal site for high-level nuclear waste. The survey is the first stage in the process of creating an underground storage facility for high-level radioactive waste from the nation's nuclear power plants. In addition to Suttsu, the village assembly of Kamoenai, about 40 kilometers away, has also agreed to undergo a survey, which comes with substantial central government funding for the cash-strapped, graying localities.

What is a Final Disposal Site for Nuclear Waste?

The reprocessing of spent nuclear fuel from the nation's nuclear power plants produces highly radioactive waste, especially uranium and plutonium, that must be converted into a form of glass in a process called vitrification, placed inside stainless steel canisters and then into a cooling pool for a number of years, until the waste can be transferred to an underground final depository site. There, the plan is for it to remain for anywhere between 1,000 and 100,000 years, until radiation levels decrease to a level that allows for safe handling.

The quasi-governmental Nuclear Waste Management Organization (NUMO) was established in 2000 to select a location and build the facility. Plans call for construction of a storage area at least 300 meters underground, covering an area of between six and 10 square kilometers, with between one and two square kilometers of surface facilities. The total cost of technology development, surveys, land acquisition, construction, operations and management is estimated at ¥3.9 trillion.

What is the Current Situation Regarding Japan's High-level Nuclear Waste? As of March 31, according to NUMO, the total volume of spent fuel produced so far was equivalent to around 26,000

canisters of vitrified waste. But Japan is only storing 2,492 canisters, with the remainder in France and the U.K.

Most of the waste (2,176 canisters worth) is being stored near the village of Rokkasho, Aomori Prefecture, with 316 canisters near the village of Tokai, Ibaraki Prefecture. All 26,000 canisters will

eventually have to be transported somewhere in Japan for final disposal. Rokkasho has been storing waste for 25 years, after originally agreeing, in 1995, that it would temporarily store waste for up to 50 years before that waste would have to be moved to a final disposal site.

What are the Basic Conditions for Choosing a Final Disposal Site? In 2017, the government released

a color-coded map of the Japanese archipelago called the Geoscientific Characteristics Map, to show which parts of Japan were judged, at the time, favorable or unfavorable based on several conditions for building a permanent disposal facility. These included the degree of risk from seismic or volcanic activity and ease of transportation access, especially by ship.

Yellow areas were judged as unfavorable in terms of the stability of geological conditions deep underground. Gray areas were those judged unfavorable due to the possibility of mineral excavation.

Light green areas were those seen as having favorable geological characteristics. Dark green areas, which included virtually the entire coastline areas of Hokkaido, Honshu, Shikoku, Kyushu and some Okinawan islands, were also favorable in terms of transportation convenience.

The Tokyo area was gray colored, indicating that it was judged unfavorable in terms of geoscientific characteristics due to the fact it contains natural

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gas. Suttsu, with a population of about 2,900, was judged to be in a favorable area. Kamoenai, a village of 820, is about 40 kilometers to the north and not far from Hokkaido Electric Power Co.'s Tomari nuclear power plant. A portion of the town was judged to be favorable due to underground geological conditions.

What is the Process and Timeline for Site Selection and Construction? There is a three-stage process. In the first stage, for which Suttsu has applied, experts review historical records and data regarding the geological structure, including soil properties as well as groundwater flow and volcanic and seismic histories of the area. This stage is expected to take two years.

If a candidate site passes Stage 1, it moves on to the Stage 2 survey, which includes excavations to determine the geological foundation's stability and to ensure groundwater will not leak into the underground facility. This stage is expected to take four years. Finally, Stage 3 involves analyzing the extracted strata to determine whether it would be safe to build an underground facility. That's a process expected to take up to 14 years.

At the end of Stage 3, a decision on whether to formally choose the site would be made by the central government. If approved construction of facilities could begin, and the facility would be expected to begin operations 10 years after that. Assuming there were no unexpected delays, the entire process would take at least 30 years.

Why did Suttsu and Kamoenai Apply? Due to their graying populations both localities are strapped for cash. By applying to undergo Stage 1, the preliminary data survey, Suttsu and, if the central government agrees, Kamoenai, can receive up to ¥2 billion in assistance from the central government over the two-year period.

If they are approved for a Stage 2 survey, which involves direct boring into the ground, they can receive another ¥7 billion over four years, regardless of whether or not they proceed to the Stage 3 analysis.

In Suttsu, the decision to apply was made by town

head Haruo Kataoka, a five-term leader who ran unopposed in 2017 but faces re-election next year. His decision has angered many town residents and others in the surrounding region. Kataoka said that while he knows many residents are opposed, he also senses a large amount of support toward applying for the preliminary survey.

What are the Political Hurdles to Actually Building a Disposal site in Hokkaido? Hokkaido Gov. Naomichi Suzuki was also upset with Kataoka's decision and, on Oct. 2, the Hokkaido Prefectural Assembly passed a unanimous resolution expressing concern with the way Suttsu acted. In addition, the prefecture had already established an ordinance in 1995 saying that while it was necessary to conduct experimental research on ways of disposing nuclear waste, it would be difficult to actually accept such waste.

Hokkaido is the site of the Horonobe Underground Research Center, which conducts research and development on disposal methods for high-level radioactive waste. A locality does not need the prefectural governor's request to apply for the Stage 1 preliminary survey. But NUMO and the central government are expected to consult with any governor before proceeding to the next stages. Formal opposition at that point by a governor could delay or derail project plans. ...

Source: <https://www.japantimes.co.jp/news/2020/10/13/national/social-issues/japan-nuclear-waste/>, 13 October 2020.

SWEDEN

Swedish Municipality Gives Approval for Fuel Repository

SKB, Sweden's radioactive waste management company, submitted applications to build the country's first nuclear fuel repository and the encapsulation plant to the Radiation Safety Authority (SSM) in March 2011. The integrated facility - the encapsulation plant and the Clab interim storage facility - is referred to in SKB's application as Clink. The application concerns the disposal of 6000 capsules with a total of 12,000 tonnes of radioactive waste at a depth of about

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500 metres. SKB also submitted an application to extend the storage capacity of the Clab facility from the current 8000 tonnes of fuel to 11,000 tonnes.

The applications have been reviewed by the SSM and the Land and Environment Court. The SSM has considered issues of nuclear safety and radiation at the facilities as laid down in the country's Nuclear Activities Act. The review undertaken by the Land and Environment Court was based on the Environment Code. Both SSM and the Land and Environment Court submitted their respective positive opinions to the government on SKB's applications in January 2018.

Under the Swedish Environmental Code, before the government makes a final decision, it must consult with the municipalities of Oskarshamn and Östhammar, which have the power to veto the application. In June 2018, the municipal council in Oskarshamn voted in favour of SKB's plan to build the fuel encapsulation plant in the municipality. The municipal council of Östhammar has now approved the planned repository at Forsmark.

... The final decision to authorise the project will

now be made by the government, which will base its decision on the assessments of both the SSM and the Land and Environment Court. If the government makes a favourable decision, the matter will be returned to SSM and Land and Environment Court, who will stipulate conditions for the facilities and issue a licence under the Swedish Environmental Code.

The application concerns the disposal of 6000 capsules with a total of 12,000 tonnes of radioactive waste at a depth of about 500 metres. SKB also submitted an application to extend the storage capacity of the Clab facility from the current 8000 tonnes of fuel to 11,000 tonnes.

"The government's decision will be the starting point for one of Sweden's largest and most important environmental protection projects and triggers

investments of around SEK19 billion (USD2.2 billion), which will create about 1500 employment opportunities." Under its current timetable, SKB plans to start construction of the used fuel repository and the encapsulation plant in the mid-2020s and they will take about ten years to complete.

Source: <https://www.world-nuclear-news.org/Articles/Swedish-municipality-gives-approval-for-fuel-repos>, 14 October 2020.



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