

U.S.-Japan-Republic of Korea Camp David Summit: An Opportunity to Leverage Mutual Nuclear Energy Capabilities to Regain Global Security Foothold

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By Jeff Crater

The leaders of United States, Japan, and the Republic of Korea descend upon Camp David on Friday, August 18, 2023 for a historic first trilateral summit among these allied nations. U.S. Defense Secretary Austin met with his counterparts in early June and later that month the respective national security advisors met to discuss regional security, including energy security in a lead up to what we now know is a trilateral summit.

Foremost on the minds of President Joe Biden, Prime Minister Kishida Fumio of Japan and President Yoon Suk Yeol of the Republic of Korea leaders will be the security of the Indo Pacific region and three neighboring foes. According to the July 29 edition of The Japan Times, "The summit announcement came just days after North Korea held a massive military parade overseen by leader Kim Jong Un, who was joined by senior Chinese and Russian officials". Assuredly, this gathering of the Russo-Sino-North Korean triumvirate is just the reason why they're scheduled to gather at Camp David this week. While regional security will be utmost in the minds of the three allied leaders, it would be a missed opportunity if the three did not focus on a distinct and peaceful area where these three global power houses could expand upon decades of cooperation: nuclear energy. Positioning the three to cooperate further helps to further expand regional stability with those developing countries considering peaceful applications of nuclear energy, while also regaining lost ground globally to the Russian and Chinese aggressive economic relationship-building done through the lens of nuclear energy in the developing world.

Nuclear energy is viewed differently than any other source of energy and rightly so. Decisions to pursue nuclear energy are national decisions driven by the level of national and international oversight required to ensure ongoing peaceful and safe use for this reliable and environmentally beneficial form of energy. Peaceful pursuit of nuclear energy can also build and foster lasting relationships throughout the world. Unfortunately, the United States has been late to the game with China and Russia spreading their influence by gradually replacing the West in places where the West was once deemed an ally and generously bringing their economic might. China and Russia are doing this effectively with nuclear energy by establishing relationships that go beyond providing grains or schools, tethering countries with long-term reactor new-builds lasting potentially 100 years or more requiring regular supplies of fuel, component replacement and maintenance while in parallel building long-term security partnerships.

China has wasted no time to export its domestic nuclear capability abroad, including its latest 1180MWe Hualong One, but more recently through its ACP100, a 127MWe small modular reactor (SMR), an ideal size for export to countries with a limited electrical grid. This will likely be the first SMR reactor in the world to start up, positioning the

ACP100 for export to the developing world. Recent videos from the China National Nuclear Corporation show the small reactor being loaded into the containment vessel on Hainan Island, the southernmost province in China, with completion by 2026. By contrast, the United States and the rest of the western world have just broken ground in Canada on a 300 MWe SMR by GE-Hitachi with a completion date of 2028 and three more promised. China has made inroads into Africa and Asia initially promising to sell large reactors, but could expand its offerings into developing and power-starved regions with this first-of-a-kind ACP100. China also has the financial wherewithal and industrial base to make this happen, starting first with their own build out. China is building more nuclear reactors for their own power generation than any place on earth, and at almost the pace the United States did in the 1970s when 62 reactors went online with a peak of 12 in 1974. To build a reactor island requires massive forgings, heavy nuclear component and ancillary component manufacturing and additional supplier networks. China, like the United States did in the 1970s, has built out its indigenous supply chain to accommodate the new-builds and could use this capacity to supply the world with large and small nuclear reactors. China also has uranium enrichment capability that it plans to nearly triple its capacity by 2030. With Russia, currently world's largest enricher, the pair will own over 60% of the world's enrichment capacity by 2030.

Russia like China has innovated faster than anyone in the world in the small reactor arena with a pair of reactors going online reportedly in 2020 totaling 64 MWe aboard a barge to supply heat and power plus desalination to the Siberian town of Pevek. Now the two countries are partnering on the next generation of floating reactors, the RITM-200M, for a major arctic copper and gold mining operation. Russia's export plans are equal to if not greater than China's, with 11 operating plants in Ukraine (now offline), Iran, China, India and Belarus and 11 more under construction for those same countries minus Ukraine, but adding Bangladesh and Turkey to the list. Russia has signed contracts for more plants in Armenia, China, Egypt and Turkey. However, it's their deal with Iran that has the West most upset because of possible links to military use. Russia is also reportedly helping China with a fresh supply of highly enriched uranium for its fast breeder reactors, but as China develops its own indigenous capabilities after relying on Russia for decades, the two in fact seem to be entering a new, more competitive nuclear energy export phase. This presents an opportunity for the West and a perfect opportunity for the three great allied and technologically capable nuclear energy nation states to cooperate on nuclear new-builds.

Both Japan and the ROK are witnessing revivals in nuclear energy after major setbacks. Japan suffered greatly from the 2011 Fukushima nuclear accident resulting in core meltdowns and a radioactive release to the surrounding area. Japan had planned to provide 40% of its power through nuclear by 2017 up from 30% pre-2011, but after a push to halt nuclear power, Japanese Prime Minister Fumio Kishida reversed his earlier commitment to stop nuclear energy altogether. Japan's current goal is to get to 20% by 2030, about where the United States stands today. Japan is looking to restart 16 additional reactors after 11 were approved for restart post-Fukushima. Japan also has 2 large reactors under construction totaling 2700MWe. The ROK's setbacks were driven by political change. The 2017-elected President paused and then phased out domestic nuclear energy construction. This quickly got scrapped after President Yoon was elected last year. Japan, like the ROK, has little to no indigenous fossil resources requiring the country to rely on imported natural gas. Japan has increased renewables providing over 30% of the far too often intermittent power, but Japan has no choice but to increase nuclear energy. For itself, the United States has witnessed a rapid expansion of small modular and micro reactor designs with ROK and Japanese suppliers and partners. In the best example of how these three countries are working together through mutual supply chains, U.S. SMR vendor NuScale with Fluor has Korean partners Doosan and Samsung and Japanese partner JGC. Yet, these three still can't go alone on fuel. While the United States is attempting to revive its moribund uranium enrichment industry, and Japan and the ROK largely driven by the U.S. to go without capability, western nuclear allies must also be brought into the fold, including the French represented by ORANO and the British-Dutch-German URENCO consortium, to expand the supply enriched uranium to fuel the trios new-builds.

As the trio gathers in Camp David this week to discuss the topic of concern, regional security, nuclear energy should be on the agenda. Nuclear energy should be on the agenda, not for its obvious carbon free and energy security benefits for the world, but to

combat what has been used as a blunt diplomatic instrument in parts of the world where America and its allies were heretofore regarded as a source of comfort and economic prosperity. We've lost that, but with cooperation among our three nations and with their leadership, we can bring that roaring back. America and our allies can leverage the best nuclear technological, manufacturing and construction capabilities from these great partners, and re-establish itself as a leader and example for what President Eisenhower had in mind for Atoms for Peace. The UAE provides a shining modern-day example of how countries like the ROK and the United States and their industries can work together to achieve great things by bringing the best minds, know-how and capabilities to complete a nuclear project on time and on budget and provide greater opportunity for people in a region. The Camp David trio has an opportunity to take the best of each and through nuclear energy make a lasting impact for peace and prosperity in the world.

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