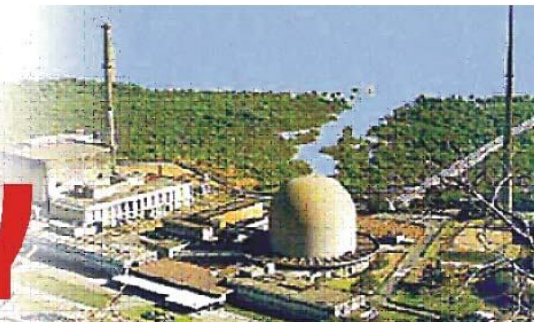
NUCLEAR SECURITY



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

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OPINION– James Wertsch, Shen Dingli, Swaran Singh

How the US, China and India will Forge New Partnerships on Nuclear Energy in 2016

This 2016 will see greater collaboration between the world's three largest polluters – the US, China and India – following their pledges to move away from fossil fuels. 2016 is set to be the year when the US forges new nuclear partnerships with China and India, and could explore joint projects in third countries, with Westinghouse Electric and the Hualong nuclear power company in negotiations for such ventures. But, given previous mutual security and non-proliferation concerns, this newfound enthusiasm may also be breeding new anxieties.

To begin with, complicated and long-winded structural integrity tests have just been declared successful for two of the four Westinghouse AP1000 nuclear power reactors being set up in China's Zhejiang and Shandong provinces. These should become operational in September and December respectively. Westinghouse is also in final stages of negotiations for six of the same type of reactor for Gujarat in India. At a price tag of some US$5 billion to US$6 billion per reactor, such reports are boosting the share price of Westinghouse, which is negotiating to buy parts of the French nuclear reactor manufacturer Areva. It reportedly needs US$7.7 billion to balance its books. Areva's losses are also allowing China's Hualong to emerge as the new cost-effective player in the sensitive global nuclear market. That explains why US firms are tying up with China.

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The US is also building energy partnerships beyond nuclear technology: General Electric [in Dec 2015] signed a US$2.6 billion contract for electrifying Indian railways and won a US$15.5 billion contract to supply turbines for China Three Gorges Corporation's Wudongde hydropower plant. These US firms are partly owned

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by Japan's Toshiba and Hitachi, which explains the changing geopolitics as PM Abe in December signed the long-awaited Indo-Japanese deal clearing the decks for American firms to deliver nuclear technology to India.

The Fukushima nuclear accident in 2011 briefly revived traditional concerns about the proliferation of nuclear technologies that are increasingly expressed in terms of safety and security of civil nuclear assets. But business lobbies are now capitalising on their shared commitments at the Paris climate change summit, where the world's three biggest polluters promised to move their economies away from fossil fuels to achieve higher cuts in carbon emissions. And, among the various alternatives proposed, nuclear power is seen as the only technology that is ready to be put in place now to achieve large-scale increases in power generation.

China, the world's leading polluter, is seeing an unprecedented push for nuclear power. It has 30 nuclear reactors in operation, 22 under construction and proposes to sign up for 30 more by 2020. Likewise, India has 21 nuclear reactors in operation, six under construction and plans for 30 new reactors by 2032. In this decade alone, the nuclear markets in China and India are expected to be worth US$1 trillion and US$200 million respectively, making the US – which already has 100 nuclear reactors producing 800,000GW of power – their most enthusiastic benefactor. Facilitating this change is the politics around India's membership of the NSG that will come to a vote this June. China remains reluctant to say yes, and has previously said Pakistan should be bracketed with India in any review.

In this decade alone, the nuclear markets in China and India are expected to be worth US$1 trillion and US$200 million respectively, making the US – which already has 100 nuclear reactors producing 800,000GW of power – their most enthusiastic benefactor. Facilitating this change is the politics around India's membership of the NSG that will come to a vote this June.

New Delhi, accordingly, is all set to ratify the IAEA's Convention on Supplementary Compensation for Nuclear Accidents, which has been a bone of contention with American firms. The coming together of the US, China and India in building nuclear partnerships has been expedited because Russian, French, Canadian and Kazakh firms have not been deterred by India's domestic situation or legislation. Given this reality, the US – which originally facilitated India's entry into global nuclear commerce – was beginning to look like a loser. Russia remains India's largest supplier of nuclear reactors and the two last month signed another agreement for an additional 12 reactors.

Most interestingly, 2016 will see China entering the Indian market as well; not necessarily as a partner with US firms but as a new competitor. As well as working with India as members of the ITER, China has a history of supplying heavy water and uranium fuel to New Delhi. The two began negotiating nuclear cooperation during President Xi Jinping's visit to India in September 2014 and China is keen to help build India's energy security infrastructure. Beijing has also been exploring markets in Southeast Asia.

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China's Hualong One nuclear reactor has earned enough experience at home and prestige abroad to make it suitable for exploring new global partnerships. Last October, during Xi's visit to the UK, he announced US$9 billion worth of investment for France's EDF and China General Nuclear Power Corporation to build three power plants in the UK, which is expected to see Hualong-designed reactors go global. India, as always, is never far behind. Since 2010, it has been offering to export

its pressurised heavy water reactors, which may be ideal for states with smaller power grids. Last month again, during PM Modi's visit to Moscow, Russia and India began negotiations on exploring joint third-country projects.

The recent shale revolution may have reinforced US energy supremacy, but it has also seen oil prices fall relentlessly, making large oil importers like China and India save their dollar reserves and invest in expensive nuclear technology. All this is whipping up US business interests that will redefine the proverbial "American exceptionalism", especially in the global governance of nuclear commerce. It will also see the US explore more innovative ways in co-opting the interests of a rising China and emerging India, giving them a greater say in global nuclear decision-making.

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Source: James Wertsch is vice-chancellor for international relations at Washington University in St Louis, Shen Dingli is associate dean at the Institute of International Studies, Fudan University, Shanghai, and Swaran Singh is professor of disarmament studies at Jawaharlal Nehru University, New Delhi. *http://www.scmp.com/ January 05, 2016.*

OPINION – William Perry

How to Contain North Korea

North Korea's latest nuclear test, its third successful one, was most likely intended to test a compact device suitable for a missile warhead. If that is correct, the test takes us closer to the point where Pyongyang's limited nuclear arsenal could pose a real threat to other nations in the region. Japan and South Korea, both within range of North Korea's already operational missiles, are deeply concerned—as they should be.

The test presents another serious threat: It increases the likelihood of nuclear proliferation and nuclear terrorism. North Korea, because of the great resources it has invested in its nuclear program, because of the mismanagement of its economy and because of the effects of sanctions, is in desperate economic condition. It could be tempted to give its economy a boost by selling some of its nuclear technology or fissile material to another party, whether a nation state or terror group. (Terror groups have long been seeking a nuclear weapon but have been constrained by their inability to make the fissile material needed for a bomb.) In this regard, North Korea's covert sale a few years ago of a nuclear reactor to Syria is a dangerous precedent.

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Unfortunately, as long as the administration continues its North Korea strategy of the six-party talks, which have failed so far and are likely to continue to fail without a change in strategy, these threats will only become more pressing. We didn't have to be in this dangerous position. In fact, once we might have been able to prevent it. In 2000, North Korea was bound by the Agreed Framework, which had frozen the production of plutonium at Yongbyon (their primary nuclear facility) since its inception in 1994, and the US was deep into a negotiation of a much more comprehensive agreement with North Korea....

But we will never know, because three months later the Bush administration came to office and stopped all discussions with North Korea. Whatever could be said of the strategy of negotiations we had been pursuing, the new strategy, based simply on its outcome, was a dismal failure. ...By 2015 we faced an angry and defiant North Korea that had armed itself with six to ten nuclear bombs, was producing fissile material for more bombs, and was testing the components of long-range missiles. Based on these outcomes, this is perhaps the most unsuccessful exercise of diplomacy in our country's history."

The question is: What can we do now? The sad answer is that it is probably too late to dismantle North Korea's program. All we can really do is try to contain it. Dr. Sig Hecker, former director of the Los Alamos Laboratory, has made four visits to Yongbyon and has held in his (gloved) hand a sample of the plutonium they have produced there. He believes that the negotiating strategy pursued by Obama's administration and the other parties to the six-party talks are doomed to continue to fail because they are based on the premise that North Korea will give up its nuclear weapons program.

If the US fails to set reasonable goals, we risk a disastrous situation: Japan and South Korea see themselves as under the gun, and will want to take strong steps to insure their own security, which might very likely include developing their own nuclear weapon capability (which they could easily do). Regional instabilities are already significant, and nuclearizing the region could make them deeply dangerous.

That premise was reasonable in 2000, before the country had nuclear weapons, but not today. Hecker argues that instead we should start off with more modest goals, goals that actually could be achieved. He calls these goals the "Three Nos": 1) No new weapons; 2) No better weapons; and 3) No transfer of nuclear technology or weapons. To that would be added a set of positive incentives. ...These goals are limited, but are of great security value in and of themselves. And if we succeed in this plan, we could then move to a follow-on negotiation the goal of which would be to eliminate all nuclear weapons in North Korea.

On the other hand, if the US fails to set reasonable goals, we risk a disastrous situation: Japan and South Korea see themselves as under the gun, and will want to take strong steps to insure their own security, which might very likely include developing their own nuclear weapon capability (which they could easily do). Regional instabilities are already significant, and nuclearizing the region could make them deeply dangerous.

An equally dangerous outcome is that nuclear weapons could fall into the hands of terrorists. The scenario is not so difficult to imagine: An economically desperate North Korea sells fissile material to an oil-rich terrorist group, which in turn makes an improvised nuclear bomb, and installs the weapon in a large packing crate marked agricultural equipment.... It's a grisly scenario indeed, but we have to consider its likelihood in order to be smart about our North Korea strategy. A full understanding of these risks will compel us to make a major diplomatic effort to deal with this new and growing threat.

Hecker's strategy would be an excellent starting point for any new negotiations. But any negotiation with North Korea, to have any chance of success, has to be conducted jointly with other nations. China is the nation that has the most leverage over North Korea, because it has traditionally supplied food and fuel of vital importance. In the past, we were never able to reach a common negotiating strategy with China, partly because China had a different assessment of how serious a nuclear threat North Korea posed.

In light of the last few nuclear and missile tests, it is possible that China now views the North Korean program as a more serious threat. I believe that the next step for the US would be to formulate a new strategy based on Hecker's "Three Nos," and to work with China, South Korea, Japan and Russia (any of which could add some incentives—

"Yesses"), to reach a common strategy for approaching North Korea. To those who believe a different or a tougher strategy could be more successful, I simply say this: Just look at our 15-year history of failure....

Source: http://www.politico.com, January 10, 2016.

OPINION - MP Ram Mohan, Els Reynaers Kini

But What's the Point? Parliament Hasn't Passed the Nuclear Safety Regulatory Authority Bill 2015 as Yet

After the Fukushima accident and at the request of the Indian government, an IAEA team consisting of senior safety experts undertook an Integrated Regulatory Review Services (IRRS) Mission on the AERB from March 16 to 27, 2015. This was the first IRRS mission to India, and was restricted only to nuclear power plants.

The IRRS recommendations clearly indicated that there should be a legal firewall between the AERB and the other nuclear departments and entities it regulates, to ensure it protects itself from any undue pressures. The new Nuclear Safety Regulatory Authority (NSRA) Bill 2015 is expected to address this key point.

Now, the full IRRS report has been made public and can be viewed on the AERB's website. This is certainly one of the most significant transparency efforts initiated by the AERB in recent times. The authors believe this signals an important commitment to adopt a new public engagement model. At a substantive level, the IRRS team identified several good practices, but also areas warranting attention or in need of improvement, to enhance the overall performance of the regulatory system in India.

Common Ground: Many of the recommendations were already put forward by a CAG audit in August 2012. This shows there is a level of commonality of views across audit bodies. One such fundamental parameter is the extent of independence. The IRRS recommendations clearly indicated that there should be a legal firewall between the AERB and the other nuclear departments and entities it regulates, to ensure it protects itself from any undue pressures. The new Nuclear Safety Regulatory Authority (NSRA) Bill 2015 is expected to address this key point.

Many in civil society and the AERB itself in private communication maintain that its "*de facto*" independence should be cemented in a law "*de jure*" as well. That said, the IRRS mission observed that the "professionalism and integrity of the AEC, NPCIL and AERB senior staff towards ensuring the regulatory decision making processes/ arrangements were completed independently and did not notice instances in which de facto AERB independence was compromised".

Another important aspect that would need to be addressed is the grievance redress system or appeal procedure against decisions by the AERB. Currently, the constitution of the AERB states that appeals against decisions of the AERB shall be with the AEC whose decision shall be final. Here, the IRRS mission remained rather timid by merely referring to and not fully suggesting a more coherent appeal procedure which would be more in tune with a fully independent mechanism.

The AERB constitution remains vague as to precisely who can appeal. These are aspects that also would need to be addressed more comprehensively to ensure that the public has faith in the nuclear regulatory system. The current redressal system also explains why people so far have generally opted to approach the courts with their grievances, rather than the AEC.

Addressing Grievances: This is regrettable because one of the most important functions in any democratic system is the redressal of grievances, whether sought by an operator, a service provider, the public or anyone who has a role in an NPP activity. Moreover, the AERB constitution remains vague as to precisely who can appeal. These are aspects that also would need to be addressed more comprehensively to ensure that the public

has faith in the nuclear regulatory system. The current redressal system also explains why people so far have generally opted to approach the courts with their grievances, rather than the AEC.

The DAE and the AERB should consider the IRRS mission review and many such suggestions of civil society in all earnestness, and thereby acknowledge that it is in the interest of the nation to make the regulatory system better, efficient and people-centric. It is important to remember what the Fukushima Nuclear Accident Independent Investigation Commission of Japan concluded: "The TEPCO Fukushima Nuclear Power Plant accident was the result of collusion between the government, the regulators and TEPCO, and the lack of governance by said parties. They effectively betrayed the nation's right to be safe from nuclear accidents."

The winter session of Parliament had in its agenda to consider the NSRA Bill 2015, but it didn't see legislative light. The Bill going into hibernation again is a missed opportunity when the expansion of nuclear power is going ahead. Let the timely detailed reports of the IRRS mission and the CAG, which amongst many recommendations strongly urges the adoption of a law that would strengthen the independence of the nuclear regulatory authority, offer an impetus to Parliament to pass the Bill. It will strengthen the independence of the nuclear regulatory authority and allow it to incorporate all recommendations, including that of the IRRS mission, and be fully structured around the key principles of regulatory independence.

Source: http://www.thehindubusinessline.com/, January 03, 2016

OPINION – Ramesh Thakur

Arms Control the Answer in North Korea

North Korea is the only country to have defected from the NPT. Its pursuit of nuclear weapons began in the 1960s, accelerated in the 1980s and led successively to its withdrawal from the NPT in 2003 and the collapse of the 1994 Agreed Framework that had frozen Pyongyang's nuclear program. It has made repeated commitments to abandon the weapons path in return for security assurances and economic assistance, shelved its nuclear ambitions temporarily and then broken its promises serially. Its 2006, 2009 and 2013 nuclear tests drew international condemnations and UN-mandated sanctions. On 6 January 2016 Pyongyang claimed to have successfully tested an hydrogen bomb. An H-bomb is a step up in destructive power that gives more explosive yield for a lighter weight but has less radioactive fallout. The 2006 and 2009 tests were plutonium-fuelled; we do not know whether uranium or plutonium was used in the 2013 test.

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Until then Pyongyang was not believed to have mastered the technology to miniaturise warheads and make them robust enough to withstand the rigours of a ballistic missile flight trajectory, such as high gravity forces, vibrations and temperature extremes. That calculation will have to be revised dramatically if the H-bomb claim and the development of a submarine-launched delivery capability (which Pyongyang says it tested last May) are confirmed. While experts are sceptical, time and again Pyongyang has demonstrated the determination, and in due course the technical expertise, to make and test nuclear explosive devices. We cannot be confident of Dear Leader Jong-un's motives. They could range from trying to ward off a genuinely feared threat to bolstering leadership credibility by projecting toughness, locking in support of the military, strengthening domestic cohesion and positioning himself to extract economic concessions. It is part of established theories of strategic deception to make your enemy believe you will act irrationally and vindictively when your vital interests are attacked.

The unfavourable demographic, economic and alliance comparisons with the South, further

intensify the North's anxieties. Nuclear weapons can also serve as a hedge against a US attack: would Saddam Hussein and Muammar Gaddafi have suffered their horrible fates had they acquired deliverable nuclear weapons? Most countries and peoples of the world are deeply concerned about the grave dangers posed by the bomb and are engaged in efforts to eliminate these inhumane weapons. Political tensions and grievances can be addressed only by political means, not by aggravating existing tensions and escalating an arms race. North Korea's provocative actions can only increase regional and international tensions and hamper efforts to reduce nuclear risks, and to minimise the numbers and role of nuclear weapons, and eventually abolish them entirely.

The world lacks a realistic options strategy for dealing with Pyongyang. Condemnations by the UNSC of Pyongyang's nuclear weapons and ballistic programs have become so ritualised that they corrode the UN's credibility as its demands are continually and serially defied. The path of still more punitive sanctions and isolation seems to lead nowhere. Unilateral punitive measures are impractical because of China's default tolerance for Pyongyang.

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Why should a strategy of deterrence not work against North Korea when it worked against the far more formidable and powerful Soviet threat in the Cold War? We managed to live with thousands of nuclear weapons being added to the Soviet arsenal year after year; why should the sky fall if a few more bombs are built by some additional countries? Some answer by branding North Korea a 'rogue regime'. Such demonisation has two negative consequences. It adds to their paranoia and deepens their determination to strengthen nuclear weapons capability in order to complicate the calculus of anyone seeking regime change. And it makes it difficult for outsiders to craft political responses to the security dilemma or seek a reconciliation based on compromise and mutual accommodation: the only acceptable goal is complete rollback, not containment based on deterrence.

The key to any solution is China's ability and willingness to ratchet up the pressure on North Korea. As a status quo power, China has a strategic stake in the NPT and does not want it to unravel. Preserving North Korea as a territorial buffer remains a critical security goal. The worst possible outcome from Beijing's point of view is a collapse or defeat of the North Korean regime that would cause a flood of refugees to stream across the border into China and bring South Korean and US forces right to China's borders – precisely the trigger that provoked China to counter-intervene in the Korean War in the 1950s in the first place. That said, Pyongyang's unpredictable, erratic and provocative behaviour heightens regional instability, strengthens US alliances with Japan and South Korea and nationalist sentiment in the latter two in favour of getting their own bomb,

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which would nuclearise China's neighbourhood. It could provoke a pre-emptive strike against the North by the US. The risk of an unwanted conflict that would undermine China's development goals lies more in the possibility of miscommunication, misperception and miscalculation that could see the cycle of provocation and escalation spin out of control. It is no longer enough for China to support others' efforts. Instead Beijing needs to step up to the plate and assume the burden of leading the world's efforts to freeze Pyongyang's nuclear program. The only lasting solution to any regional nuclear proliferation crisis has to be the complete elimination of nuclear weapons under a universal, verifiable and enforceable international convention.

The moral outrage from the five permanent members of the UNSC, who between them possess 98 per cent of the world's stockpiles of nuclear weapons, rings hollow. Nor can allies who shelter under the nuclear umbrella, including Australia, occupy the moral high ground. No one who insists on any continuing utility for nuclear weapons in safeguarding national security can reject that argument for North Korea. This is especially so because to many non-Western countries, the major Western powers seem to have become addicted to bombing countries that cannot defend themselves and promoting regime change if the leaders refuse to kowtow to Washington's dictates. So the second key component of a nuclear-weapon-free world is abandonment of forcible regime change as a policy goal which motivates fearful regimes to risk all in the quest for nuclear weapons. Given the brilliant record of the policy thus far, this may not be much of a self-sacrifice.

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Source: http://www.policyforum.net, January 2016.

OPINION – Michael O Hanlon

How to Dismantle North Korea's Nuclear Arsenal

The US and its regional partners are correct to oppose categorically a North Korean nuclear weapons capability, as well as all the testing and other activities that have become associated with it. This cornerstone of our collective policy should remain unchanged; to do otherwise would put the entire fabric of the Nuclear NPT at risk and accede to a nuclear weapons capability in the hands of what may be the world's single most brutal regime.

But we also need to recognize reality: North Korea continues to test nuclear weapons—no other country has done so this century. Even worse, as best we can tell, it continues to produce more fissile materials and thus quite likely more bombs. It remains demonstrably unfazed by Western sanctions and unafraid of Chinese retaliation. And the world's tentative conclusion, that it failed to detonate a true hydrogen bomb in its recent test, is only likely to stoke its interest in trying again down the road. We can stick with an ethically justifiable and morally pure policy that is failing, or we can try something else.

It remains demonstrably unfazed by Western sanctions and unafraid of Chinese retaliation. And the world's tentative conclusion, that it failed to detonate a true hydrogen bomb in its recent test, is only likely to stoke its interest in trying again down the road. We can stick with an ethically justifiable and morally pure policy that is failing, or we can try something else.

Most observers have rightly called on China to tighten its economic aid and trade with the North. This is the correct diplomatic message to convey to Beijing. It is also likely to fail just as much as previous attempts. For all Beijing's concern about having a nuclear-armed neighbor in northeast Asia, it is North Korea's only ally, and vice versa. It is also afraid of Jong-Un's bellicosity and unlikely to wish to provoke him. So

we should play out the current efforts to persuade Beijing to tighten sanctions in realms like banking and hydrocarbons, but keep expectations modest.

We need a policy that is both more pragmatic, in terms of its immediate goals for changing North Korea's behavior, and more promising in its ability to gain greater Chinese cooperation for squeezing North Korea if there are further unacceptable actions taken in the future. How to do this? We cannot reward North Korea for its outlandish actions, or "buy the same horse three times" to paraphrase those American officials who argued in the past that North Korea violated previous denuclearization deals and then returned to the negotiating table, only to demand additional compensation. But we can offer incentives for North Korea to take certain actions that it has not yet been asked to undertake, along with restraint on the nuclear front, as part of a package deal.

Our interim goal should be to dissuade Pyongyang from any more nuclear testing and to persuade it to dismantle verifiably its nuclear infrastructure—the reactor that produces plutonium and the centrifuges that produce enriched uranium. We know where the former is; apparently we still have no clue about the latter, so some form of managed access would be needed to identify and visit these sites (perhaps involving Chinese, Russian or UN monitors, if American eyes are unwelcome).

Our longer-term goal should still be complete denuclearization, including the dismantling of the ten or so bombs North Korea is believed to possess—but that step could happen at the end of a long process that need not be formally undertaken or even fully negotiated at the outset. The incentives we could offer in the short term would be a gradual relaxation of many existing sanctions on North Korea, in return not only for the near-term nuclear restraint noted above, but for an end to the production and testing of ballistic missiles above a certain range, and a pullback of some potent weaponry from near the DMZ. That would be the near-term package deal.

Over the longer term, the deal could aim for denuclearization and a fuller normalization of relations. If North Korea also agreed to steps to scale back its conventional forces substantially, and to gradually reform its economy (à la Vietnam), the international community could offer more humanitarian and development aid, along with full diplomatic ties. Complete denuclearization would be part and parcel of such an agreement. Of course, achieving or even negotiating such a plan is not realistic in the short term. But we can lay out the vision while working with the North on the shorter-term package of sanctions relief in exchange for verifiable nuclear restraint, stringent limits on ballistic missile testing and production and conventional force pullbacks.

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To hawks, this kind of package may seem too kind to Pyongyang. But the standard hawkish alternative of advocating regime change has few prospects for success absent the kind of help that China is presently unwilling to provide. For doves, the above may seem wishful. And indeed, the odds are probably stacked against it. But presented as part of a package deal, it may do better than past attempts at a narrow denuclearization accord.

Our current North Korea policy isn't working. Yet not all is lost. There is a meaningful difference between freezing North Korea's nuclear capabilities where they are now, on the one hand, and seeing them continue to advance qualitatively and quantitatively on the other. Moreover, laying out such a vision for disarmament, even if unsuccessful, would be consistent with Chinese instincts and preferences on the issue. By

promoting it, we would have established a predicate for asking Beijing for tougher measures next time North Korea misbehaves, should that again occur. Whether the policy achieves its preferred goal or not, it is likely to work better than the course we are now on.

Source: http://nationalinterest.org/ January 11, 2016.

OPINION – Cesar Jaramillo

Nuclear Weapons are Unacceptable in the Hands of Any Nation

North Korea's recent nuclear-weapons test constitutes provocative, destabilizing activity for the region and the globe and demands strong condemnation from the international community. Every effort must be made to keep North Korea's nuclear ambitions in check — not only to produce a workable nuclear warhead but, just as critically, to develop delivery systems that could reach perceived adversaries, including the US and other Western countries. Certainly North Korea's irresponsible actions create legitimate international security concerns. But too often outside policy-makers and observers seem to overlook the simple fact that the current standoff is in part a result of an unsustainable nuclear-weapons regime that perpetuates a double standard between states that have nuclear weapons and those that do not.

Certainly North Korea's irresponsible actions create legitimate international security concerns. But too often outside policy-makers and observers seem to overlook the simple fact that the current standoff is in part a result of an unsustainable nuclear-weapons regime that perpetuates a double standard between states that have nuclear weapons and those that do not.

A blatant disregard for a decades-old commitment to disarm under the NPT creates strong proliferation pressures that can only be counteracted by the complete elimination of nuclear weapons. What is needed is a global legal ban on the possession, deployment, and use of these instruments of mass destruction. No exceptions, no exemptions. North Korea's recklessness does not obscure the fact that the fundamental rationale for its nuclear weapons program is essentially the one used by other nuclear-armed states and by the NATO, itself a nuclear alliance: a stubborn belief in nuclear deterrence to protect vital national security interests.

Nuclear weapons continue to be framed as the supreme security guarantee for the majority of the world's population – either through direct possession or by virtue of collective security arrangements. The governments of India and China – states that together have more than 2.5 billion citizens – retain nuclear arsenals, and thus the distinct possibility of engaging in nuclear warfare. While North Korea's test is unequivocally unacceptable, the moral high ground of some of the countries now chastising it is undermined by the fact that they have long engaged in the same activity they now condemn. This was North Korea's fourth nuclear weapons test. Had the test been conducted by the US – one of the few countries in the world not to have ratified the CTBT – it would have been its 1,055th.

The North Korean nuclear test must be understood in the broader context of the failure of the NPT to deliver on the promise of complete nuclear disarmament. Seven decades after the destruction of Hiroshima and Nagasaki, 45 years after the entry into force of the treaty, and more than a quarter-century after the end of the Cold War, nearly 16,000 nuclear weapons threaten the very survival of humanity and Earth.

The renewed attention in recent years on the humanitarian impact of nuclear weapons has served as both catalyst and rallying point for a growing number of states and international civil society organizations. An increasingly loud denunciation of the intransigence of states with nuclear weapons can be heard around the globe. Calls to immediately begin a serious process to unequivocally prohibit and verifiably eliminate

nuclear weapons are more persistent. Yet the imperative for nuclear abolition is built not only on humanitarian grounds. The difficulties in achieving a world without nuclear weapons are symptoms of a broader multilateral system riddled with double standards. The global nuclear disarmament and non-proliferation regime constitutes a case study in inequitable, discriminatory global governance.

The NPT was designed to prevent non-nuclear-weapon states from acquiring nuclear weapons and to compel nuclear-weapon states to eliminate them. Those that hold nuclear weapons have resisted, avoided, or ignored not only their treaty obligations, but the groundswell of support for nuclear abolition from all corners of the planet. Instead, states with nuclear weapons are spending billions of dollars to modernize their arsenals. While even one nuclear weapon remains, there is a real possibility of nuclear catastrophe – by accident, miscalculation, or design.

North Korea's reckless actions have important implications for international peace and security and merit universal condemnation. But the most urgent concern about nuclear weapons is broader than this particular test. The root of nuclear insecurity is in the continued possession of nuclear arsenals by a few states and the continued resistance of those states to disarm. There are no right hands for wrong weapons.

As important and necessary as it is to tackle the North Korean nuclear threat, proliferation concerns will never be fully allayed as long as nuclear weapons exist. Further, there is now a clear and widespread recognition that the discriminatory nature of the global nuclear disarmament regime – whereby nonproliferation is an obligation and disarmament a mere aspiration – is decidedly not conducive to nuclear abolition. Some states consider the pursuit and possession of nuclear weapons by certain nations or groups intolerable, but seem content to accept the nuclear-weapons programs of military or economic allies, even outside the NPT framework. The US and Canada, for example, not only turn a blind eye to the rogue Israeli nuclear weapons program, but engage in nuclear co-operation agreements with India, contravening a long-standing agreement that nuclear co-operation should be reserved for Nuclear Non-Proliferation Treaty states parties.

The endgame for nuclear abolition is remarkably straightforward: There must be a universal, non-discriminatory process, with provisions for the irreversible elimination of existing nuclear arsenals and a timeline for verified implementation. But setting lofty goals has never been the problem. Nuclear abolition has been an international objective for decades, supported in theory even by states with nuclear weapons. It is implementation which has proved difficult.

Opportunities to engage on this issue exist. An open-ended working group established by the United Nations General Assembly will meet for 15 days in 2016, with a mandate to develop "legal measures, legal provisions and norms" to achieve a nuclear-weapon-free world. The open-ended working group offers a key forum at which nuclear-weapon states can show the international community that their talk of a world free of nuclear weapons is more than empty rhetoric. North Korea's reckless actions have important implications for international peace and security and merit universal condemnation. But the most urgent concern about nuclear weapons is broader than this particular test. The root of nuclear insecurity is in the continued possession of nuclear arsenals by a few states and the continued resistance of those states to disarm. There are no right hands for wrong weapons.

Source: http://www.therecord.com/ January 09, 2016.

NUCLEAR STRATEGY

CHINA

China's Nuclear Policy, Strategy Consistent: Spokesperson

China's nuclear policy and strategy are consistent, without any changes, Defense Ministry spokesperson Yujun said on January 01, 2016 at a press conference. He made the remarks when commenting on whether the establishment of the

PLA Rocket Force means China will enhance the building of its nuclear force. Reiterating its no-first-use nuclear weapons policy and defensive nuclear strategy, the spokesperson said China always keeps its nuclear capability at the minimum level required for safeguarding its national security.

The PLA Rocket Force, renamed from the PLA Second Artillery Force, will act as a core force of strategic deterrence, a strategic buttress to the country's position as a major power, and an important building block in upholding national security, the spokesperson said. "We will strive to build a strong and modern Rocket Force," he said. President Jinping conferred military flags to the general command of the PLA Army, the PLA Rocket Force and the PLA Strategic Support Force at their inauguration ceremony held Thursday in Beijing.

Source: http://news.xinhuanet.com, January 01, 2016.

BALLISTIC MISSILE DEFENCE

SERBIA

Serbia Requests Missile Defense Systems from Russia

Moscow is considering Serbia's request for defensive weapons and interest in deepening military ties. Russian Deputy PM Rogozin met with Serbian PM Vucic in Belgrade on January 11, 2016, and afterward said the final decision on Serbia's request to procure Russian weapons would be made to meet Serbia's minimal security requirements. Russian state-owned Sputnik News reports that during the meeting, Rogozin presented a mock-up of Russian-made S-300 air defense system.

Serbia's request for Russian arms comes after its neighbor Croatia began talks with Norway to acquire BMD. However, Russian state-owned news agency Tass reports Serbian President Nikolic maintains he does not want to start a war with Croatia. Vucic says Croatia's move raises national security concerns. "I am not nervous, but worried," Vucic told Serbian state news agency Tanjug. "The ballistic rockets and launch pads that Croatia is planning to acquire have ranges of 300 and 350 km. You can target any location in central Serbia from Zagreb or any other location." Rogozin stressed the requested weapons in question are "not offensive ones but those capable of removing any risks of an attack on Serbia."

Source: http://www.upi.com/ January 11, 2016.

USA

US Upgrades Giant Missile Defence System Days after North Korea Says It's at Brink of War

The Pentagon decided to upgrade latest Baseline 9.C1 version of its Aegis missile defence system as the rogue state continues their power demonstration against South Korea and the US. Aegis Programmes Director, Sheridan said the latest upgrade can destroy air and ballistic missile targets simultaneously. He said: "The Aegis Combat System Baseline 9.C1 offers unprecedented capabilities, including simultaneous air and BMD. "The BMD capabilities of Baseline 9.C1 are also present in Aegis Ashore, the ground-based missile defence program that is the second phase of the US Phased Adaptive Approach to protect Europe from ballistic missile attack."

The addition to the US weapons arsenal comes after North Korea released a video showing the reclusive state conducting a successful submarine-launched ballistic missile test.

The addition to the US weapons arsenal comes after North Korea released a video showing the reclusive state conducting a successful submarine-launched ballistic missile test. The footage was recorded by the country's state broadcaster, Korean Central Television, on Dec 21, 2015. In the video the North Korean leader Jong Un can be seen proudly observing the military exercise as the missile took flight. The country could be capable of deploying a submarine armed with a nuclear-tipped missile with just one year, according to a Pyongyang official. Senior Pyongyang official Nam warned: "Jealous of the successful test of our first H-bomb, the US and its

followers are driving the situation to the brink of war by saying they have resumed psychological broadcasts and brought in strategic bombers."

In addition to the latest BMD programming and upgrade, the new system also has the capability to shoot down ballistic missiles in both the upper and lower atmosphere. The US Navy and Missile Defence Agency conducted four tests on the USS Jones last summer, during which the Aegis system successfully intercepted two ballistic missile and two air warfare targets, officials said. Tensions increased between the two states after an American bomber capable of carrying nuclear missiles flew just 45 miles from North Korea.

The B-52 Bomber conducted a low fly pass just four minutes south of the border and a US Forces spokesman said the mission was a "response to recent provocative action by North Korea". Lieutenant General J O'Shaughnessy said: "As demonstrated by today's mission, the combined US and Republic of Korea air forces work and train together closely every day, and we are totally prepared to meet any threat to our alliance."

Source: http://www.express.co.uk/ January 12, 2016.

Nuclear power does not release carbon or particulates into the atmosphere. It however creates toxic and mildly radioactive waste which must be stored indefinitely at significant cost. Clean-up costs for nuclear power stations are also high and often hidden from initial estimates. It is also common for nuclear power projects to experience significant delays and to go wildly over-budget.

NUCLEAR ENERGY

CHINA

China to Build 40 Nuclear Power Plants over the Next Five Years

The PRC is set to build around 40 domestic nuclear power plants over the next five years, the country's Government has said. The country's 13th five year plan period, running from 2016 to 2020, includes provisions for building six to eight new nuclear power plants a year. If all goes according to plan, the country will aim to increase its output to ten plants a year past 2020. British energy policymakers will be eyeing China's domestic nuclear power programme with interest after the country's government signed a deal to finance the next generation of UK nuclear power.

Chinese Communist Party general secretary Jinping signed the £40bn UK deal as part of a series of investment accords in a visit to the UK in October. The deal will see the state-owned General Nuclear Corporation take a two-thirds stake in the Bradwell nuclear power plant, where a Chinese-designed nuclear reactor is planned. A one-third stake will be taken in Hinkley Point, a plant run by the French state-owned firm EDF. A one-fifth stake will be taken in a project at the Sizewell plant. Cameron hailed the deal as "historic" and said the new plants would provide "reliable" power to homes and businesses. Meanwhile, China's £385bn domestic programme represents a large increase in nuclear power use in the country.

Mainland China currently has 30 nuclear power reactors in operation and 22 under construction, according to the World Nuclear Association. A three-fold increase in generating capacity is planned by 2020-21, with the part aim of reducing reliance on coal and the air pollution it causes. Nuclear power does not release carbon or particulates into the atmosphere. It however creates toxic and mildly radioactive waste which must be stored indefinitely at significant cost. Clean-up costs for nuclear power stations are also high and often hidden from initial estimates. It is also common for nuclear power projects to experience significant delays and to go wildly over-budget. China's domestic commitment comes after an estimate of how much nuclear power would be needed by the State Nuclear Power Technology Corporation dating from in September 2013.

Source: http://www.independent.co.uk, January 04, 2016.

FINLAND

Finland Shoots Down Russia Nuclear Energy Option with "Super-Grid" Option

Now that the historic COP21 Paris climate talks have concluded with a big push to reduce human-related carbon emissions sooner rather than later, nuclear energy has been gaining more traction as the most effective way to do that. Russia is among the nations already moving in that direction, but a new study from Finland's Lappeenranta University of Technology indicates that Russia nuclear energy is a move in the wrong direction, and that Eurasia as a whole would be better served by a less expensive, less risky renewable energy "super-grid."

As a birthplace of nuclear power technology, Russia lays claim to be the first in the world to generate electricity from a nuclear power plant. In addition, its nuclear services and manufacturing industries are now an important exporter as well as a domestic supplier.

With ample renewable energy resources, and the memory of the 1986 Chernobyl power plant disaster still fresh in living memory, it may seem a little odd that Russia would be gung ho on nuclear energy. However, according to the World Nuclear Association latest update in December 2015, Russia nuclear energy really is a thing. After languishing for about 10 years in the aftermath of Chernobyl, the nation's domestic industry kicked back into gear and there are plans under way to construct approximately one large reactor per year up to 2028.

WNA also points out that nuclear energy is cemented into Russia's national character by history. As a birthplace of nuclear power technology, Russia lays claim to be the first in the world to generate electricity from a nuclear power plant. In addition, its nuclear services and manufacturing industries are now an important exporter as well as a domestic supplier. As for Chernobyl, here's where it gets interesting. WNA ascribes fault for the catastrophic meltdown to the Cold War, which isolated Russia from the latest design, safety, and operational improvements enjoyed by the rest of the world. With the Cold War long fading into history, problem solved...

Russia Nuclear Energy, From a Finnish Point of View: With all this in mind, let's take a look at that LUT study, which you can find online at *researchnet.gate* under the title "Eurasian Super Grid for 100% Renewable Energy power supply: Generation and storage technologies in the cost optimal mix." To be clear, the body of the report is an analysis of renewable energy scenarios in Russia and Eurasia, but the point of the report is to demonstrate that there are cheaper – less risky – options than either nuclear energy or coal with carbon capture, as discussed in the conclusion:

The 100% renewable resource-based energy system options for Eurasia presented in this work are considerably lower in cost (about 44-61 %) than the higher risk options, which have still further disadvantages. These include nuclear melt-down risk, nuclear terrorism risk, unsolved nuclear waste disposal.

The 100% renewable resource-based energy system options for Eurasia presented in this work are considerably lower in cost (about 44-61 %) than the higher risk options, which have still further disadvantages. These include nuclear melt-down risk, nuclear terrorism risk, unsolved nuclear waste disposal…. That point of view certainly won't make friends over at the Breakthrough Energy Coalition, a group of high powered investors that used the occasion of the COP21 climate talks to lobby for increased investment in nuclear programs. The report also provides a measure of support for opponents of the proposed Hinkley Point C nuclear power plant in Somerset, England. No matter what the improvements in nuclear power plant safety, the simple fact is that the rapid pace of progress in the renewable energy field is turning nuclear energy into an economic dinosaur.

The LUT Russia Renewable Energy Study: As for the study itself, to paraphrase very loosely, the basic idea is that while energy storage can provide the required stability and reliability for intermittent wind and solar power, energy storage is not necessarily the most economical solution for renewable energy. Instead, the study argues for the creation of a "Super Grid" that involves building new transmission lines and leveraging Eurasia's considerable wind energy resources to reduce energy storage costs. Compared the current situation, in which wind and solar only account for 1.5 percent of a total 388-gigawatt capacity for the Eurasia:

...The modelled energy system is based on wind, hydropower, solar, biomass and some geothermal energy. Wind amounts to about 60 percent of the production whilst solar, biomass and hydropower are distributed evenly. The total installed capacity of renewable energy in the system is about 550GW. Slightly more than half of this is wind energy and 20 percent is solar. The rest is composed of hydro and biomass supported with power-to-gas, pumped hydro storage and batteries.

India has cleared the decks for setting up a Nuclear Liability Fund with a corpus of Rs 2,000 crore that will allow the government to pitch in if damages resulting from a nuclear accident in the country exceed the limit specified for nuclear plant operators under the law.

***The Power-To-Gas Factor*:** If you caught that thing about power-to-gas, the LUT team identifies it as a key factor in the lower cost of the renewable energy scenario. Power-to-gas refers to the production of hydrogen from water, a process that can be powered by electricity sourced from wind, solar, and other renewable sources. The LUT study foresees that such systems would undercut the use of natural gas from fossil sources. In addition to undercutting natural gas on price, power-to-gas would also reduce energy storage costs:

...When moving to a renewable energy system, for example, natural gas is replaced with power-to-gas, i.e. converting electricity into gases, such as hydrogen and synthetic natural gas. This increases the overall need for renewable energy. The more renewable capacity is built the more it can be used for different sectors: heating, transportation and industry. This flexibility of the system decreases the need for storages and lowers the cost of energy.

Source: http://cleantechnica.com, January 04, 2016.

INDIA

Govt Approves Setting up a Nuclear Liability Fund with a Corpus of Rs 2,000 Crore

India has cleared the decks for setting up a Nuclear Liability Fund with a corpus of Rs 2,000 crore that will allow the government to pitch in if damages resulting from a nuclear accident in the country exceed the limit specified for nuclear plant operators under the law. The operators will have to pay a levy of 5-10 paise per unit of electricity sold to the fund, which will be the biggest addition to the pool of compensation available for nuclear damages. The operator's liability is capped at Rs 1,500 crore under the 2010 Civil Liability for Nuclear Damage Act.

The PMO cleared the move in December 2015, following which the DAE notified the Nuclear Liability Fund Rules, 2015 on December 8. A date for the levy to commence will soon be notified, said an official. According to the rules, the fund will comprise the levy collected from operators of nuclear installations. The operators will have to pay to the fund a levy at the rate of 5 paise or a levy at such rate between 5 and 10 paise for every unit of electricity sold to the customers, says the notification, a copy of which has been seen by ET.

"The levy shall be collected and paid to the fund till the total amount reaches Rs 2,000 crore, and thereafter, the process shall resume in the event of any withdrawals from the fund so as to ensure that the fund balance remains at Rs 2,000 crore at any given time," the new rules specify. The

payments made by an operator towards the fund will be credited to the Consolidated Fund of India and then transferred to the Public Account under the 'MH 8235 General and Other Reserve Fund'. The Centre will be required to take Parliament's approval before making payments out of the fund after due assessment and operators delaying quarterly payments to the fund will pay interest to the tune of 18% on daily basis, as per the rules.

In January 2015, India and the US reached an understanding on the issues related to civil nuclear liability and finalised the text of the administrative arrangement to implement the September 2008 bilateral 123 Agreement, thereby allowing both the countries to move towards commercial negotiations on setting up reactors with international collaboration in India.

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Source: http://articles. economictimes. indiatimes. com, January 04, 2016.

SOUTH AFRICA

Montalto: Nuclear Energy Plan Will Likely Fail

Montalto told Fin24 that if the 9 600 MW nuclear procurement programme does see the light of day, it will be a "slimmed down programme spread over a longer period of time, given the affordability issue". ...The respected economist said he agreed with energy expert Yelland's opinion to remain calm after cabinet signed off on a gazette over the Christmas period that allowed the DoE to start the process of calling for quotes. "We are taking small steps along a very long path through to 2030," said Montalto.

DoE director general Zulu confirmed in a statement on December 26 that cabinet received a report back from the Energy Security Cabinet Sub-Committee in December, which had considered the work being done by both the DoE and Treasury in respect of the funding and financing of the programme. "The decision to proceed with issuing the request for proposal will further assist in developing a funding model," said Zulu. The latest press release clarifies the process, explained Montalto, but said analysts are still left with the impression "that nuclear has always been more advanced than was being let on". "To have undertaken the framework agreements with foreign providers, we always must have had some degree of sign off like this."

Questioning South Africa's transparency, Montalto said the decision to gazette so close to Christmas strengthens the perception that the government has "signed non-public agreements with Russia" to award its state-owned company, Rosatom, the nuclear contract. Rosatom prematurely announced it had won the contract in 2014, after President Zuma secretly visited Russia. It later retracted its statement and told Fin24 in 2015 that it was a public relations mistake. ...

Source: http://techfinancials. co.za/, January 05, 2016.

USA

2015 Brought Positive and Negative Changes to New York Energy Industry

The state of New York's energy market changed dramatically in 2015. As natural gas and renewable sources took center stage, nuclear power sources like Oswego County's FitzPatrick Nuclear Plant were squeezed. Those changes are visible at a new exhibit in the Milton J. Rubenstein Museum of Science and Technology in Syracuse. The exhibit at MOST includes multiple interactive activities that allow young minds see how energy is produced. It focuses mainly on renewable sources of energy. There's a solar wheel that can be turned to see how the various ways the sun produces energy. And if you wave your hand over a sensor in the wind turbine exhibit, a light will shine on various homes and businesses to show what it can power....

MOST President Leatherman said the exhibit is vastly different from the one designed 10 years ago which focused on carbon-based energy.... The changes to New York's energy market are quite visible too. More solar rooftops came online in 2015 as New York state sponsored local Solarize initiatives to help increase the spread of solar panels. The state also contributed millions more for its green bank, which will fund clean energy initiatives and businesses. And in December, the governor ordered the state public service commission to start enforcing his goal of 50 percent renewable energy in the state by 2030.

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..."Whether New York will ever consider allowing hydraulic fracturing for natural gas and what, if anything, is going to be done to help nuclear plants remain open in the face of really low electricity prices caused by cheap natural gas," Wilcoxen asked. The rise in cheap natural gas and more renewables in the market has hurt nuclear power plants. Entergy this year announced it would close the FitzPatrick Nuclear Power Plant, which is expected to close by early 2017. Wilcoxen said that nuclear may not be renewable, but it does have a role to play as a bridge to the future. "Over the long term as the country gets more serious about climate change, nuclear power is not a technology of the past," Wilcoxen said. "It is going to play an important role in keeping carbon emissions in the energy sector low."

Diablo fits into California's future energy mix as the state tries to halt global warming. Unlike conventional power plants burning fossil fuels, Diablo pumps no greenhouse gases into the sky. It also supplies 8 percent of the electricity generated within the state. Closing it now, the plant's supporters argue, would undermine California's climate fight.

Source: http://wrvo.org/, January 04, 2016.

Can Gavin Newsom Close California's Last Nuclear Plant?

Gavin Newsom has a prediction about California's last nuclear power plant, Diablo Canyon: It won't stay open another 10 years. And due to a quirk of Diablo's complicated history, he could have a hand in closing it. Diablo sits on a coastal bluff near San Luis Obispo and uses seawater for coolant. The chutes that suck in water from the Pacific and return it to the ocean – 2.5 billion gallons per day – lie on tidelands owned by the state and leased by the plant's owner, Pacific Gas and Electric Co.

Those leases expire in 2018 and 2019. Without the cooling system, the plant can't run. So PG&E this 2016 asked the State Lands Commission, chaired by Lt. Gov. Newsom, for a new lease, casting the move as a simple administrative step.

***Newsom Predicts Closure*:** Instead; Newsom wants to subject the request to a full environmental impact review, a process that can take more than a year. It could also rekindle arguments about Diablo's safety, since the plant sits within a web of earthquake fault lines discovered after construction began.... Already running for governor in 2018, Newsom often touts his support for green causes. At the same Lands Commission meeting, he even predicted that Diablo Canyon could close when its federal operating licenses expire in 2024 and 2025 – something many California environmentalists desperately want. PG&E has not yet decided whether it wants to renew the federal licenses.

...He has urged the commission to think about how Diablo fits into California's future energy mix as the state tries to halt global warming. Unlike conventional power plants burning fossil fuels, Diablo pumps no greenhouse gases into the sky. It also supplies 8 percent of the electricity generated within the state. Closing it now, the plant's supporters argue, would undermine California's climate fight. The commission may vote in February on whether a new tidelands lease will require an environmental report, under the California Environmental Quality Act. PG&E argues that it shouldn't....

Expiration Dates Vary: When PG&E leased the tidelands at Diablo, the company didn't realize that the leases would expire six years before the plant's federal operating licenses. But then, very few things in Diablo's early days went according to plan. Construction on the plant began in 1968, and the state granted Diablo's two tideland leases in 1969 and 1970. Each lease would last 49 years. Federal operating licenses for nuclear plants run for 40 years. So as long as PG&E managed to open the plant by 1979, the state leases and the federal licenses would match up. But in 1971, geologists discovered an offshore fault line 3 miles from Diablo. PG&E was forced to redesign a plant it had largely built, and defend it from massive protests. Diablo didn't open until 1985. Hence the lease problem.

Renewing Diablo's federal licenses would keep the plant open an additional 20 years. But since PG&E has not decided on this move, rather than seek another 49-year lease on the shore, the company asked the State Lands Commission for a new 6-year lease that would expire at the same time as the plant's existing licenses.

Renewing Diablo's federal licenses would keep the plant open an additional 20 years. But since PG&E has not decided on this move, rather than seek another 49-year lease on the shore, the company asked the State Lands Commission for a new 6-year lease that would expire at the same time as the plant's existing licenses. Much of the debate about the plant's future already focuses on the cooling system. Another California government panel – the State Water Resources Control Board – is expected to vote this year on whether PG&E should be forced to install a new cooling system that uses less seawater and kills fewer fish. Diablo's system kills an estimated 1.5 billion fish eggs and larvae each year. A report commissioned by PG&E forecast that replacing the system with cooling towers could cost as much as $14 billion. Environmentalists who have been pushing to close Diablo for years argue that the plant's toll on fish violates the existing state leases, which were supposed to protect the coastal environment....

Source: http://www.sfchronicle.com, January 03, 2016.

NUCLEAR COOPERATION

INDIA–AUSTRALIA

Civil Nuclear Deal with Australia Gets Green Signal

India's Civil Nuclear Cooperation Agreement with Australia got the Union Cabinet's approval on December 28, 2015. The agreement had already come into force on November 13, 2015 along with the administrative agreement for its implementation. The administrative agreement makes it possible for uranium exports to go ahead, however, the commercial agreements are yet to be signed. The agreements coming in force were announced on the sidelines of the G-20 Summit in Turkey by PM Modi and his Australian counterpart Malcolm Turnbull, in November 2015.

Both sides signed a memorandum of understanding in September 2014 when former Australian PM Abbott was visiting India. "The fuel supply arrangements with Australia will bolster energy security by supporting the expansion of nuclear power in India," an official statement said. Currently, India sources uranium from Kazakhstan, Uzbekistan and Russia. It has a total requirement of around 1,000 tonne of a year. Australia has around 31 per cent of the world's uranium reserves. It also has some of the cheapest reserves. Earlier in 2015, India also signed a contract with Canada for the long-term supply of uranium. In 2015, India has successfully reached an agreement with several countries in the field of civil nuclear power.

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In December, during the PM's visit to Japan, a bilateral civil nuclear cooperation agreement was signed. The agreement with US was put back on track earlier 2015 after the India Nuclear Insurance Pool was set up. Further, a civil nuclear

cooperation agreement with Russia and France has also been taken forward during the year.

Source: http://www.thehindubusinessline.com, December 30, 2015.

SOUTH KOREA–JAPAN

South Korea-Japan Ties Strengthen in Wake of Latest North Korean Nuclear Test

North Korea's nuclear test set off alarm bells in Japan and South Korea, but its more enduring outcome may be the cementing of a fragile reconciliation that could lead to military cooperation between the two key US allies.... North Korea's latest nuclear detonation could strengthen that reconciliation, say military officials and defense experts, as the two countries unite against a common threat. That, in turn, could lead to military cooperation instead of the frosty distance they have maintained, even though they are Washington's closest allies in the region.

North Korea's latest nuclear detonation could strengthen that reconciliation, say military officials and defense experts, as the two countries unite against a common threat. That, in turn, could lead to military cooperation instead of the frosty distance they have maintained, even though they are Washington's closest allies in the region.

"I think the comfort women pact and the North Korean test could spur military cooperation," a senior Maritime Self-Defense Force officer said, speaking on condition he was not identified. "The test has worsened the security situation in the region." South Korean President Geun-hye spoke by phone to PM Abe on January 07, 2016. They discussed the need for close cooperation with each other, as well as with the US, China and Russia, according to Park's office.

Senior defense officials from South Korea, Japan and the US held a video conference January 07, 2016 and agreed "to continue to cooperate closely and share information on North Korea's nuclear threat," Pentagon spokesman Davis said.

The distance between South Korea and Japan has worried Washington as it increasingly relies on its Asian allies to work together to guarantee security in the region amid China's growing military might. Past strains have prevented Japan and South Korea from agreeing to share sensitive military information.

US Secretary of Defense Carter also spoke by phone to Defense Minister Gen Nakatani on January 08, 2016 and "agreed that trilateral cooperation with the Republic of Korea is critical to deterrence and maintaining peace and security in Northeast Asia and beyond."

The Pentagon said the two reiterated their commitment to continuing close trilateral cooperation and information sharing. "There may be a broad review of what can be done to improve security cooperation (with Japan)," said a senior South Korean official.... The distance between South Korea and Japan has worried Washington as it increasingly relies on its Asian allies to work together to guarantee security in the region amid China's growing military might. Past strains have prevented Japan and South Korea from agreeing to share sensitive military information. An attempt to institutionalize security cooperation through the General Security of Military Information Agreement (GSOMIA) in 2012 failed after significant domestic opposition in South Korea.

In a bid to resolve the impasse, Washington agreed in 2015 to act as a go-between to allow Seoul and Tokyo to swap intelligence. "It really is in the interest of all three countries that we have no seams between that information when you are trying to defend your country against a ballistic missile," Vice Adm. Aucoin, commander of the US Seventh Fleet, said January 08, 2016. ...In December 2014, Seoul said it would send the Lockheed Martin F-35 fleet it has ordered to Australia for maintenance, well beyond their operating range, rather than to a regional maintenance hub for the stealth fighter to be set up in Japan.

Abe and Park, nonetheless, will still have tread carefully around long-held grievances that date back to World War II. Seoul has criticized Japanese school textbooks that it says distort history and downplay Japan's wartime and colonial atrocities and the two countries are at odds over territorial issues....

Source: http://www.japantimes.co.jp/, January 09, 2016.

NUCLEAR PROLIFERATION

NORTH KOREA

North Korea Nuclear Test Brings to Fore Pakistan's Proliferation Record

Top US lawmakers and experts had expressed concern over Pakistan's proliferation history and its nexus with rogue nations like North Korea in helping them acquire nuclear weapons, a month before Pyongyang successfully conducted its first hydrogen bomb test. The issue came up for discussion during a Congressional hearing less than a month ago when top American Congressmen and experts opposed the idea of a civil nuclear deal with Pakistan as they pointed to efforts of Pakistan officials and scientists in the past to share the sensitive nuclear technologies to countries like Libya and North Korea.

Abe and Park, nonetheless, will still have tread carefully around long-held grievances that date back to World War II. Seoul has criticized Japanese school textbooks that it says distort history and downplay Japan's wartime and colonial atrocities and the two countries are at odds over territorial issues.

"AQ Khan Network is believed to have sold sensitive nuclear technology to the most unstable countries on the planet," Congressman Poe, Chairman of the House Foreign Affairs Subcommittee on Terrorism, Nonproliferation and Trade, said during a Congressional hearing on December 8, 2015. AQ Khan is the founder of the uranium enrichment programme for Pakistan's atomic bomb project. "It was the Khan Network that allowed North Korea to get its uranium enrichment program up and running. Khan also sold Libya design secrets and nuclear weapons components during the same time," Poe said.

"Discussions about a potential nuclear deal could send the wrong message to Pakistan, in my opinion the Benedict Arnold of American allies. Pakistan crossed the nuclear weapons threshold in 1985 under the direction of the notorious scientist, AQ Khan," he said. "In the very early years of the network Khan established an extensive clandestine network in order to obtain necessary technologies and materials. Later on Khan used similar channels to make a profit by selling nuclear designs and materials to other countries," Poe said.

Haqqani, the former Pakistan ambassador to the US, told lawmakers that Pakistan has refused to abjure first use of nuclear weapons in a conflict, a position similar to that of North Korea which also claims that it fears being overrun by a superior conventional force.

Agreed Congressman Keating, Ranking Member of the same committee. "Pakistan has a history of proliferation. The network led by one of the founders of its nuclear program AQ Khan, sold nuclear weapons related equipment and technology to Iran, Libya and North Korea," he said. Haqqani, the former Pakistan ambassador to the US, told lawmakers that Pakistan has refused to abjure first use of nuclear weapons in a conflict, a position similar to that of North Korea which also claims that it fears being overrun by a superior conventional force. "The A Q Khan network certainly supplied designs and equipment to Iran, although the Pakistani Government took the position that those were unauthorised," he said.

Sokolski, executive director of the Nonproliferation Policy Education Center, in response to a question, indicated that Pakistan might still help deliver any type of nuclear weapon capabilities to anyone. A top American Senator had expressed concern that Saudi Arabia might buy nuclear weapons from

Pakistan amidst increase in tension with Iran. "Saudi has good relationships with Pakistan. They could just buy a weapon and again further destabilise the Middle East," Senator Johnson told the *CNN* in an interview.

Source: http://www.dnaindia.com, January 07, 2016.

North Korea Announces it Conducted Nuclear Test

North Korea says it has successfully carried out a hydrogen bomb test, which if confirmed, will be a first for the reclusive regime and a significant advancement for its military ambitions. A hydrogen bomb is more powerful than plutonium weapons, which is what North Korea used in its three previous underground nuclear tests. "If there's no invasion on our sovereignty we will not use nuclear weapon," the North Korean state news agency said. "This H-bomb test brings us to a higher level of nuclear power." A senior US administration told CNN it could take days to obtain the scientific data to determine whether this was a successful test.

North Korea appears to have had a difficult time mastering even the basics of a fission weapon. "This suggests that unless North Korea has had help from outside experts, it is unlikely that it has really achieved a hydrogen/fusion bomb since its last nuclear test, just short of three years ago.

The South Korean defense ministry said it too could not immediately confirm the test's success, but the country's foreign ministry hastily convened an emergency meeting. Officials in Japan were also holding discussions. The test took place at 10 a.m. local time, the regime said in a televised statement. The seismic event, which measured the event at a magnitude of 5.1, occurred 19 km (12 miles) east-northeast of Sungjibaegam, the United States Geological Survey said.

A Big 'If': In the past, North Korea has tested fission weapons, which break large atoms like plutonium, into smaller atoms, creating considerable energy. Fusion weapons, such as hydrogen bombs, use fusion to combine small atoms – such as hydrogen – to create much larger amounts of energy. Nuclear weapons based on fission typically have a yield of around 10 kilotons, while nuclear weapons employing fusion can have a yield measured in megatons. A hydrogen bomb is hundreds of times more powerful than the atomic bomb that devastated Hiroshima in 1945.. "Kim Jong Un made public statement a few weeks ago saying that (the country was) developing a hydrogen bomb." But, said Bennett, North Korea's claims ought to be taken with a grain of salt.... "North Korea appears to have had a difficult time mastering even the basics of a fission weapon," he said. "This suggests that unless North Korea has had help from outside experts, it is unlikely that it has really achieved a hydrogen/fusion bomb since its last nuclear test, just short of three years ago."

Regional Response: The development illustrates the continuing challenge North Korea poses to its neighbors and the world. "We have consistently made clear that we will not accept it as a nuclear state," said a spokesman for the National Security Council. "We will continue to protect and defend our allies in the region, including the Republic of Korea, and will respond appropriately to any and all North Korean provocations."

The North Koreans have signaled for some time the test was a possibility, said Chinoy, with the US-China Institute at the University of Southern California. "The fact that the test has taken place, assuming it was successful, complicates the situation in Northeast Asia," he said. "Beijing had been becoming more friendly." Being more warm and cordial was hoped to restrain North Korea but now this places the Chinese authorities in a big dilemma. South Korea has also said a fourth test would be a watershed moment that would warrant a response, Chinoy said.

There is currently no diplomacy from the US to restrain the nuclear development, so this test "also puts the US on the spot."Will any of their steps do anything to restrain North Korea? My guess is probably not." Japan quickly issued a

strong condemnation, saying the test was a "serious threat" to its security. "It clearly violates the UNSC resolution and is a serious challenge to the nuclear non-proliferation efforts," said Japanese PM Abe.

Heavily Militarized Country: North Korea's internationally isolated regime is a heavily militarized state with a huge standing army of 1.2 million active soldiers and 7.7 million reservists. But its conventional weaponry is dated, with limited effectiveness, and it has looked to developing its nuclear capabilities to project power internationally. The country declared it had nuclear weapons in 2003, and conducted nuclear tests in 2006, 2009 and 2013.

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In May 2015, it said it had the ability to miniaturize nuclear weapons, a development that would allow it to deploy nuclear weapons on missiles. A US National Security Council spokesman responded at the time that the US did not think the North Koreans had such a capability. Albright, a former UN weapons inspector, told CNN in 2015 that Pyongyang could already have 10 to 15 atomic weapons, and that it could grow that amount by several weapons per year. He said he believed Pyongyang had the capability to miniaturize a warhead for shorter missiles, but not yet for intercontinental ballistic missiles capable of reaching the United States.

Regardless, the nuclear test was perceived by neighbouring countries Japan and South Korea as threatening to their security, and by countries around the world as provocative, irresponsible and in violation of a global norm against nuclear tests. The parliaments of South Korea and Japan adopted resolutions condemning the test, and calling for additional sanctions against North Korea.

Source: http://edition.cnn.com, January 06, 2016.

NUCLEAR NON-PROLIFERATION

JAPAN–SOUTH KOREA

Parliamentarians and the North Korean Nuclear Test

On January 6, North Korea announced it had conducted a nuclear weapons test, and claimed it was a hydrogen bomb – a fusion weapon which is much more powerful than the fission bombs it had tested previously. The evidence points however to another fission bomb explosion. Data collected at a Global Seismographic Network Station in Mudanjiang, China indicates a three – seven kiloton blast, far too small to be a hydrogen bomb. Regardless, the nuclear test was perceived by neighbouring countries Japan and South Korea as threatening to their security, and by countries around the world as provocative, irresponsible and in violation of a global norm against nuclear tests. The parliaments of South Korea and Japan adopted resolutions condemning the test, and calling for additional sanctions against North Korea. ...The nuclear test serves as a reminder that the North East Asian region is experiencing a range of conflicts amongst nuclear-armed States (China, Russia, USA and North Korea) and those under extended nuclear deterrence relationships (Japan and South Korea) – elevating the possibility of a nuclear exchange by accident, miscalculation or intent....

Diplomacy, Cooperative Security and Disarmament: PNND leaders, while condemning the North Korean test, called for diplomacy, cooperative security and disarmament as the most important response. 'North Korea's nuclear test, whether successful or not and regardless of whether it was a hydrogen bomb reminds us of the heightened risk nuclear weapons pose,' says Chowdhury MP, PNND Co-President and President of the Inter Parliamentary Union. 'What we need is not an escalation in rhetoric but in action to ban nuclear weapons just as we have banned biological and weapons, land mines and cluster munitions and put in place a legally binding instrument that prohibits nuclear weapons.'

The Japanese parliament also called for diplomatic efforts to resolve the conflict with North Korea, and highlighted the Pyongyang Declaration (adopted in

2002 by Japan PM Koizumi and North Korea leader Kim Jong-Il) in this regard. The Pyongyang Declaration confirmed 'the importance of establishing co-operative relationships based upon mutual trust among countries concerned in this region, and shared the recognition that it is important to have a framework in place in order for these regional countries to promote confidence-building, as the relationships among these countries are normalized.'

NE Asia Nuclear Weapon Free Zone: Calls for North Korea to unilaterally abolish its nuclear arsenal – and the imposition of sanctions until it does so – are unlikely to succeed as long as North Korea perceives there to be a nuclear threat or threat of attack from the US or from North Korea's neighbours Japan and South Korea. PNND Japan and PNND Korea have therefore been exploring proposals to decrease the threats from, and increase the security of, all parties in the region.

One of these proposals is the 3+3 North East Asian NWFZ. This would require all three regional countries of South Korea, North Korea and Japan to agree to prohibit the possession of nuclear weapons and the deployment of nuclear weapons on their territories, as well as agreeing not to threaten the other countries with the use of nuclear weapons (e.g. through extended nuclear deterrence relationships). It would also require the US, China and Russia to recognise the zones and not to threaten to use nuclear weapons against any of the parties in the zone.

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'The answer to dealing with North Korea is not to accept their sabre-rattling, but to understand it, and to find an approach that addresses their security concerns as well as those of the countries threatened by North Korea,' says Ware, PNND Global Coordinator. 'The NE Asia NWFZ proposal provides a win/win/win/win approach which enhances the security of all States in the region.' Already the proposal has high-level cross-party support in the Japanese and South Korean parliaments, plus support from academics, policy analysts and over 400 Japanese mayors. It was also highlighted in a PNND joint parliamentary statement in response to the first North Korean nuclear test in 2006.

Source: http://www.pnnd.org, January 10, 2016.

NUCLEAR TERRORISM

CANADA

Canada Mounts UN Anti-Nuke Effort; Trudeau Joins Obama Fight on Nuclear Terror

Canada plans to kick-start a long-stalled international effort aimed at ridding the world of the key ingredients needed for nuclear weapons, The Canadian Press has learned. The renewed push by Canada's UN ambassador to Geneva to spearhead the creation of a Fissile Material Cut-off Treaty or FMCT, comes as PM Trudeau is expected to attend US President Obama's NSS. Trudeau's presence at the Obama summit, March 31 and April 1, would come just three weeks after his scheduled March 10 gala state dinner at the White House. Canada's renewed focus on nuclear non-proliferation efforts has been in the works for months, but the effort has new urgency because of North Korea's recent claim to have conducted a test of a hydrogen bomb.

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"I think it sent a chill through the world community and reinvigorates this discussion and this debate," McCarney, Canada's permanent representative to the UN in Geneva, told The Canadian Press. McCarney said she'll be starting the first of a series of meetings at the Conference on Disarmament, the UN's main arms-control body, with the aim of re-starting negotiations this year towards creating the fissile material treaty. McCarney may have her work cut out for her, because Trudeau's own briefing book says the UN effort towards crafting such a treaty dates back almost six decades and has been beset by "deadlock."

"An FMCT has been on the UN's agenda since 1957," says the memo to the prime minister, which was obtained under the Access to Information Act. In 1995, Canada brokered an agreement on a negotiating mandate for the treaty, but in the intervening years, the effort stalled. "Since 2008, Pakistan has blocked work on an FMCT," the memo states. But Canada has also worked with Germany, the Netherlands and Australia to make progress. Canada got the ball rolling again in 2012, when it sponsored a resolution at the UNGA establishing a commission of experts to push the matter forward. More meetings and reports followed.

Trudeau now plans to support another process – Obama's fourth and final NSS, an effort he launched in 2010 after a landmark speech in Prague a year earlier. In that speech, Obama highlighted the threat posed by nuclear terrorism, as he announced an initiative aimed at securing nuclear materials and cracking down on the illicit trafficking in them. Trudeau said last fall he wants to look for ways to work with Obama on major international issues in the president's final year in office.

"A nuclear terror attack anywhere in the world would have catastrophic human, political, economic and environmental consequences," Trudeau was told by federal officials who prepared the briefing documents. "While the immediate risk of such an attack may appear to be low, states and terrorist groups are known to be actively seeking nuclear or radiological weapons capabilities." The memo states that former PM Harper announced $28 million in funds aimed at nuclear security at Obama's last summit in 2014, and that Trudeau will likely bring some money of his own to the table in 2016.

"A package of programming deliverables is already being prepared to inform the prime minister's participation in the 2016 summit," it says. Another memo to Trudeau stresses that Canada views progress to a total ban on nuclear weapons – the yet unattainable Nuclear Weapons Convention – to be "not politically feasible" because some of the states that have those weapons refuse to negotiate. But it cites a successfully negotiated FMCT as one step towards that.

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"We want to get to a Nuclear Weapons Convention without question. Section 1 of any Nuclear Weapons Convention is going to be fissile materials because if we don't stop the production of fissile materials we can't get to a Nuclear Weapons Convention," said McCarney. She also heralded the Iran nuclear deal, which the US brokered with five other countries, as a major step in the right direction. The deal would prevent Tehran from developing the technology needed to build a nuclear weapon.

"It's one of our success stories for 2015," said McCarney. "So we can be cautiously optimistic that we'll be able to say in the years to come that here's a great example of a country that was certainly on a path to nuclear armament that has stepped away." On the vexing question of North Korea, McCarney had a more sanguine view. Canada will continue to work closely with its allies, and maintain the pressure of sanctions....

Source: http://www.metronews.ca, January 10, 2016.

NUCLEAR SAFETY

CANADA

Ontario Urged to Abandon $13-Billion Nuclear Reactors Rebuild

Environmentalists want the Ontario government to abandon plans for a $13-billion refurbishment of four nuclear reactors at the Darlington generating station east of Toronto and instead import more electricity from Quebec. The Ontario Clean Air Alliance says nuclear projects always run over budget, and it doesn't want to see taxpayers on the hook to pay for rebuilding the Darlington reactors that are owned and operated by Ontario Power Generation.

Environmentalists want the Ontario government to abandon plans for a $13-billion refurbishment of four nuclear reactors at the Darlington generating station east of Toronto and instead import more electricity from Quebec. The Ontario Clean Air Alliance says nuclear projects always run over budget, and it doesn't want to see taxpayers on the hook to pay for rebuilding the Darlington reactors.

"Every single nuclear project in Ontario's history has gone massively over budget by two and a half times," said Alliance president Gibbons. "OPG says this project will cost $12.9 billion, but if history repeats itself it will be $32 billion."

Greenpeace Canada, meanwhile, is concerned about the safety and health risks posed by nuclear power generation in the event of an accident, and says refurbishing the aging reactors at Darlington is not worth the risk... Quebec is the fourth-largest producer of electricity generated by water in the world, has the lowest power rates in North America, and could sell Ontario enough electricity to replace what would be generated by a refurbished Darlington, said Gibbons. "We should sign a long-term deal with Quebec which would enable us to cancel the Darlington rebuild project, keep our lights on and reduce our electricity bills," he said. Some existing transmission lines between Ontario and Quebec would have to be upgraded for an inter-provincial power deal, which the Clean Air Alliance estimates would cost $500 million but the Independent Electricity System Operator puts at closer to $2 billion.

Importing power from Quebec or Manitoba would require construction of new dams and power stations, and perhaps more difficult would be constructing new transmission lines to reliably deliver the power where it's needed.

...Bruce Power announced plans in December to spend $13 billion to refurbish the nuclear reactors at the generating station it operates in Kincardine, on Lake Huron, and the private company will assume all risks of cost overruns. Ontario's only other nuclear station, in Pickering, is also scheduled to be decommissioned by 2020, and there are no plans to rebuild its reactors to extend their lives. Ontario is looking to expand existing electricity agreements with Quebec and is exploring importing power from Manitoba as well, but Kathleen Wynne wants to keep generating about 50 per cent of the province's electricity from nuclear power. "We made a decision not to build new nuclear, and we basically took $15 billion off the future energy plan by doing that," Wynne said in an interview with The Canadian Press.

"So in order to make sure that we have enough power, we need to refurbish our nuclear, we need to buy from Quebec, we may need to buy from Manitoba, and we need to grow our green energy sector, our solar and wind." OPG president and CEO Lash touted the benefits of the Darlington project in a speech in December, saying most of the $12.9-billion budget would be spent in Ontario. "The Conference Board of Canada crunched the numbers and determined the refurbishment would generate $14.9 billion in economic benefits to Ontario ... and about $5.4 billion in revenues for all three levels of government," said Lash.

"Importing power from Quebec or Manitoba would require construction of new dams and power stations, and perhaps more difficult would be

constructing new transmission lines to reliably deliver the power where it's needed." Ontario's New Democrats also said the Liberal government should consider options like importing power from Quebec instead of going ahead with the Darlington rebuild. "The people of Ontario want to be sure that the future options for electricity are ones they can afford, because they sure can't afford it now," said NDP energy critic Tabuns.

Source: http://www.ctvnews.ca, January 04, 2016.

UK

UK Shuts Down Oldest Nuclear Unit Wylfa 1 in Wales

The UK has shut down its oldest operational nuclear reactor, Wylfa 1, on 30 Dec 2015. Comprising two 490MW units, the facility is located in Anglesey, an island off the northwest coast of Wales. It generated around 1GW of atomic energy, which sufficed nearly 40% of Wales' total power demands. Both the units at the plant entered service in 1971, and was originally due to shut in 2010. The units at the facility were the last operating ones among the 26 Magnox reactors built across UK, starting in the 1950s. Magnox had been the operator for the nuclear facility for nearly 45 years. The second unit, Wylfa 2, has already been closed in April 2012. Fuel rods will be reprocessed and are already being removed from the reactor. Wylfa 1 was expected to shut down by September 2014, but had continued operations.

...Defuelling of Wylfa 1 unit is scheduled to start during mid 2016, while full-scale decommissioning at the entire site, which is expected to be fuel free by late 2018, will last for several decades. Magnox said: "Wylfa, on Anglesey, was the last and largest in a fleet of 11 UK plants based on the ground-breaking Magnox design that led to the world's first-ever industrial-scale nuclear power station, supplying the nation with electricity." The first among the UK plants was the 190MW Calder Hall facility in Cumbria, which started operations in 1956. Magnox reactors were also exported to Italy and Japan in the 1960s, reported Reuters.

Source: http://www.power-technology.com, January 04, 2016.

SOUTH KOREA

South Korea Says it Detected Small Amount of Xenon Gas after North Korea's Nuclear Test

South Korea said it has detected the presence of xenon gas following North Korea's alleged nuclear test. According to Reuters, the country's nuclear safety agency said it detected a tiny amount of xenon. Experts have said that the presence of xenon would not indicate whether Pyongyang had tested a hydrogen bomb, the report added. Many governments and experts have cast doubt over North Korea's claim that the test was of a hydrogen bomb. January 08, 2016, the Korea Institute of Nuclear Safety said a small amount of radioactive elements was found in air samples collected from the peninsula's eastern seas after the blast but the measured amount was too small to determine whether the North had really detonated a nuclear device.

On January 10, 2016, an American B-52 bomber flew over South Korea in an apparent show of force. The US Pacific Command said the flyover was "in response to a recent nuclear test by North Korea." The bomber was flanked by South Korean fighter jets. "This was a demonstration of the ironclad US commitment to our allies in South Korea, in Japan, and to the defense of the American homeland.

The institute said the level of xenon-133 isotopes found in the samples was similar to levels normally detected at its two radioactive gas detectors on the eastern and western coasts. KINS official Ki-hyeong also noted that other types of xenon isotopes used to confirm nuclear explosions weren't detected. Ringbom, a nuclear physicist with the Swedish Defence Research Agency in Stockholm, told Science Magazine: "If you detect the xenon isotopes, that's the smoking gun that proves the detonation was nuclear in nature."

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Korea." The bomber was flanked by South Korean fighter jets. "This was a demonstration of the ironclad US commitment to our allies in South Korea, in Japan, and to the defense of the American homeland," said PACOM Commander Adm. Harry B. Harris Jr., according to CNN. According to a CNN reporter, North Korean officials definitely took notice of the B-52, given that US bombers destroyed much of Pyongyang during the Korean War....

On January 09, 2016, speaking to a massive crowd at Pyongyang's Kim Il Sung Square, a top ruling party official said the broadcasts, along with talks between Washington and Seoul on the possibility of deploying in the South advanced warplanes capable of delivering nuclear bombs, have pushed the Korean Peninsula "toward the brink of war."

Source: http://www.theepochtimes.com, January 10, 2016.

USA

NRC to Conduct Special Inspection at Oconee Nuclear Power Plant

The Nuclear Regulatory Commission has began a special inspection on January 05, 2016, at Duke Energy's Oconee nuclear power plant to assess the degradation of power cables on startup transformers for two of the plant's three units. The power plant is located near Seneca, S.C., about 30 miles west of Greenville. A plant operator making routine inspections on Dec. 7 discovered a disconnected cable that should have been connected to the Unit 3 startup transformer. Upon further inspection, it was determined that other cables linked to the Unit 1 startup transformer were in a degraded condition. All of the cables have been repaired and the transformers are available for use if needed.

"There was not an event in which the startup transformers were needed, but they play a very important role in some circumstances by providing electrical power to plant safety equipment," said Wert, acting NRC Region II administrator. "We felt a special inspection was warranted to gather more information about Duke's response and also determine if there are generic issues that may apply to other plants."

The team's work will include a review of the circumstances surrounding the degradation and failure of the cables and the utility's actions after the degraded conditions were identified. It will also develop a timeline on when the cables were damaged and/or failed, and review Duke's testing and maintenance practices.

The on-site inspectors for the special inspection are the senior resident inspector from the Oconee power plant and an inspector from the NRC's Region II office in Atlanta. Another NRC expert from Atlanta will not travel to the site, but will assist in reviewing the data gathered. The team's work will include a review of the circumstances surrounding the degradation and failure of the cables and the utility's actions after the degraded conditions were identified. It will also develop a timeline on when the cables were damaged and/or failed, and review Duke's testing and maintenance practices. The on-site portion of the inspection will take several days. A report documenting the results should be issued within 45 days of the completion of the inspection.

Source: http://www.pennenergy.com, January 04, 2016.

NUCLEAR WASTE MANAGEMENT

AUSTRALIA

Queensland Community Oman Ama Reject Proposed Nuclear Waste Dump

A southern Queensland community is demanding to be removed from the federal government's shortlist of potential nuclear waste dump sites. Locals at Oman Ama, west of Warwick, have written to energy and resources minister Frydenberg asking to be taken off the list of six potential sites to store "low to intermediate" nuclear waste. The Friends of Omanama group said what it called the federal government's

"indoctrination program" had not convinced locals to support the proposal. It said the group had unanimously rejected the proposal "in its entirety" at a meeting on 21 Dec 2015.

"Accordingly, we would request that there be no further such meetings sponsored by your department. There is an element of circularity and, in view of the above rejection resolution, we see this as a waste of taxpayer funds." The group has also written to the landholder asking for them to withdraw their application to be a nuclear waste dump site "in the interests of community harmony". The six sites shortlisted were chosen from 28 voluntarily nominated across Australia and will be whittled down to one or two next year following public consultation.

Source:http://www. theguardian. com, January 04, 2016.

USA

Battelle to Conduct N.D Borehole Research

A US Department of Energy contractor plans to drill a test borehole more than 16,000 feet, or a little more than three miles, into a crystalline rock formation in North Dakota. The goal is to learn more about whether such extremely deep boreholes might be useful for the disposal of high-level radioactive waste. The $35 million, five-year DoE contract was awarded to a team led by Battelle Memorial Institute, which is the same primary parent company of Idaho National Laboratory's contractor, Battelle Energy Alliance.

The research will examine various drilling techniques, borehole stability and sealing, and geology far below the surface to see if it may be appropriate for safely disposing radioactive waste, a DOE news release said. "This is an important first step to increasing our scientific understanding of the potential uses for crystalline rock formations, including the feasibility of boreholes as an option for long-term nuclear waste disposal," Secretary of Energy Moniz said in a statement. The idea of disposing nuclear waste in deep holes drilled into granite is at least 40 years old, according to DOE. But not until 2012 did the Blue Ribbon Commission on America's Nuclear Future recommend further research into using boreholes as a "disposal alternative for certain forms of waste that have essentially no potential for re-use."

The idea of disposing nuclear waste in deep holes drilled into granite is at least 40 years old, according to DOE. But not until 2012 did the Blue Ribbon Commission on America's Nuclear Future recommend further research into using boreholes as a "disposal alternative for certain forms of waste that have essentially no potential for re-use."there is currently no place in the US to dispose of high-level radioactive waste. The Yucca Mountain nuclear waste repository in Nevada was intended as such an underground disposal site, but the project stalled out five years ago due to political reasons. Spent nuclear fuel, meanwhile, continues to accumulate in storage casks at commercial nuclear power plants.

There is currently no place in the US to dispose of high-level radioactive waste. The Yucca Mountain nuclear waste repository in Nevada was intended as such an underground disposal site, but the project stalled out five years ago due to political reasons. Spent nuclear fuel, meanwhile, continues to accumulate in storage casks at commercial nuclear power plants. Boreholes "basically represent another tool in the toolbox as we try and figure out this waste management problem," said Provencher , manager of DOE's Idaho operations office. No nuclear waste will be used in the research project, Provencher said. The project will take place on about 20 acres of state-owned land near Rugby, in the northern part of the state.

Source: http://www.renewablesbiz.com, January 08, 2016.

Nuclear Disposal Lake Huron

For over forty years, the Bruce Nuclear Generating Station, based near the shores of Lake Huron has provided clean energy to Ontario, but the production also results in bi-products; low, intermediate and high nuclear waste. Finding methods to both store and dispose of this waste is a challenge that all nuclear stations have dealt with over the years. The newest plan in this

operation from Ontario Power Generation (OPG) and Bruce Power is a deep geological repository or DGR for short.

The project is an underground facility constructed by drilling deep into the Earth into specific natural rock formations. Inside these rocks, low and intermediate waste is deposited in order for it to undergo a gradual decay, a reduction of radioactivity. Depending on the type of waste, it can take an extended period of time, sometimes thousands of years for an item to become fully purged of radiation. OPG has collaborated with the Municipality of Kincardine on the project, who benefits from both the energy for homes and the jobs created. In 2001, they went to the OPG to discuss the possibility of building the DGR for the disposal of nuclear waste. In the years following, Ontario Power Generation conducted research into safety, environmental impact, rock formations and other case studies in deep geological repositories.

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In recent years however, some resistance has emerged to the project from two main parties. Formed in 2012 by local citizen Beverly Fernandez, "Stop the great lakes nuclear dump" poses the question "Would you bury poison beside your well?" and argue there is no guarantee that the nuclear waste will never leak into the nearby Lake Huron. Similarly the Saugeen First Nation, a group of aboriginal people are not in approval because any accident at the facility would damage their traditional lands.

Source: http://buzz.bournemouth.ac.uk, January 10, 2016.

Centre for Air Power Studies

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

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