

Nuclear, Missile & Space Digest

Volume 4, Number 16 A Fortnightly Newsletter from the Indian Pugwash Society August 17, 2012

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- A permanent solution for spent nuclear fuel is needed now Sentinel Source
- Germans Confront The Costs Of A Nuclear-Free Future ERIC WESTERVELT. NPR
- Polish missile defense plan puts Poland first Micha? Baranowski, Warsaw Business Journal
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All the articles are available from the mentioned sources in original format.

A. USA

US blueprint for war with China flawed and could spark nuclear strikes, says expert

Dylan Welch, *National Security Correspondent – Brisbane Times*, August 9, 2012

“I don’t doubt for a moment ... that the real target of the Air-Sea battle is China” ... Professor Hugh White. THE US government might like to deny it, but Barack Obama’s former intelligence chief has confirmed China is a principal target of a major US war plan.

The American plan, known in Washington as Air-Sea Battle, is strategically flawed, Australia’s foremost regional defence expert, Hugh White, said, and risks escalating a US-China struggle to the level of nuclear strikes. It is also known to have angered the Chinese military, and the confirmation is likely to be viewed with displeasure in Beijing.

The confirmation was provided by Admiral Dennis Blair, a straight-talking Asia expert who until 2010 was Mr Obama’s director of national intelligence. Before that he led the US Pacific Command, which represents about a fifth of the US military machine.

His answers were in response to questions posed by the Herald about Air-Sea Battle, a Pentagon strategy designed to knock out an enemy’s long-range surveillance radar and precision missiles, followed by a blistering air and sea assault.

<http://www.brisbanetimes.com.au/world/us-blueprint-for-war-with-china-flawed-and-could-spark-nuclear-strikes-says-expert-20120808-23uom.html#ixzz23UuYqqa>

Missile Defense Agency May Go in New Direction With New Chief, Advocate Says

Rachel Oswald, *Global Security Newswire*, August 08, 2012

WASHINGTON — The Obama administration’s nomination last week of an admiral to head the U.S. Missile Defense Agency has issue observers wondering if new leadership could lead to new operational focuses for the organization (see GSN, Aug. 7).

The timing and the choice of Navy Rear Adm. James Syring, currently the program executive officer for the service’s Integrated Warfare Systems program, to replace Lt. Gen. Patrick O’Reilly came as a surprise to Riki Ellison, a well-connected advocate of missile defense programs.

“I think it’s a shock to a lot of the community,” said Ellison, who founded and chairs the Missile Defense Advocacy Alliance. “We’ve never had a Navy head of the Missile Defense Agency. ...This is a big culture change for a lot of people.”

Today’s Missile Defense Agency traces its origins to the Strategic Defense Initiative established in 1983. Since that time, only Army and Air Force officers or civilians have directed the Defense Department branch that oversees the large majority of U.S. research, development and acquisition of technologies for countering ballistic missile strikes, according to the MDAA group.

<http://www.nti.org/gsn/article/missile-defense-agency-may-go-new-direction-new-navy-leadership-advocate-says/>

Lugar visits Moscow to press for renewal of nuclear pact

Julian Pecquet, *The Hill*, August 06, 2012

Sen. Dick Lugar (R-Ind.) left for Moscow on Monday as part of a three-nation trip during which he'll press for extending his signature Nunn-Lugar disarmament agreement, which expires next year.

Lugar is also slated to travel to Ukraine and Georgia as part of his annual oversight visits to verify the implementation of the Cooperative Threat Reduction Program. He authored the program with then-Sen. Sam Nunn (D-Ga.) in 1991 to provide countries of the former Soviet Union with funding and expertise to dismantle their weapons of mass destruction programs.

"My visit comes at a time of considerable stress in our bilateral relationship with Russia, great challenges in Ukraine and tremendous opportunity in Georgia," he said in a statement announcing the trip. "The constant basis for cooperation against existential threats in all three nations has been the Nunn-Lugar program, which has endured despite great differences and dramatic changes.

"Renewing the umbrella agreement with Russia is important to continuing the WMD destruction that is in both of our national interests. The Nunn-Lugar program is also a critical element of our military-to-military and security cooperation with Russia, the Ukraine and Georgia as we face global security challenges."

<http://thehill.com/blogs/global-affairs/europe/242369-lugar-visits-moscow-to-press-for-renewal-of-nuclear-pact>

For New Nuclear Chief, Concerns Over Plant Safety

MATTHEW L. WALD, *New York Times*, August 13, 2012

ROCKVILLE, Md. — The new chairwoman of the Nuclear Regulatory Commission has good news and bad news for the nuclear power industry. The good news is that although an impasse over the storage of nuclear waste now threatens some of the industry's routine activities, the chairwoman says she believes that a permanent repository can be set up eventually.

The bad news is that she considers the industry's evaluation of earthquake vulnerability — an issue that was once believed to be settled when a nuclear power plant was licensed — to be inadequate.

Allison M. Macfarlane, the first geologist to serve on the commission, which regulates power plants and the civilian use of radioactive materials, arrives at a time when geology has moved to the center of the industry's concerns. Since the triple meltdown at Japan's Fukushima Daiichi plant last year, which was caused by an earthquake that the Japanese industry had not believed was possible, a question has reverberated: Are the 104 reactors in the United States prepared for the worst challenge they could face?

Nuclear waste is also a crucial issue for the commission these days. In June, a federal appeals court ruled that the agency has acted too hastily in issuing licenses to power plants on the theory that waste could be safely stored at the plants until a final resting place is established.

<http://www.nytimes.com/2012/08/14/us/new-nuclear-commission-chief-faces-waste-storage-questions.html>

New U.S. Nuclear Regulator Says Spent Fuel A Top Priority

Kasia Klimasinska,
Bloomberg, August 15, 2012

The new chairman of the U.S. Nuclear Regulatory Commission said she plans to concentrate on the disposal of spent atomic fuel, an issue that is holding up decisions on power-plant licenses. Allison Macfarlane, in her first news conference since taking over at the NRC on July 9, today also called on Congress and the White House to identify a permanent disposal site for spent fuel from the nation's 104 nuclear reactors.

Cooling towers emit steam at the Exelon nuclear energy plant in Pottstown, Pennsylvania. U.S. plants keep used fuel rods on site, in water pools or dry casks, because of a lack of permanent storage. The NRC this month suspended final decisions on licenses for power plants until it completes a reassessment of risks related to storing spent atomic fuel. U.S. plants keep used fuel rods on site, in water pools or dry casks, because of a lack of permanent storage.

Yucca Mountain in Nevada, an initial candidate for a permanent nuclear-waste dump, was rejected by the Obama administration following opposition from Senate Majority Leader Harry Reid, a Democrat from Nevada. "We are paying more attention to spent nuclear fuel," Macfarlane told reporters. "We know this is a pressing issue."

<http://www.bloomberg.com/news/2012-08-14/new-u-s-nuclear-regulator-says-spent-fuel-is-top-priority.html>

US appeals court delays decision on Yucca Mountain licensing suit

Platts, August 03, 2012

The US appeals court on Friday said it will wait until Congress sets the fiscal 2013 budget before it decides whether to order the US Nuclear Regulatory Commission to resume licensing of the high-level nuclear waste repository at Yucca Mountain, Nevada.

But two of the judges on the three-judge panel of the US Court of Appeals for the District of Columbia Circuit indicated they support ordering the NRC to eventually resume the review, which was halted by the agency in 2011 because what the agency said was a lack of funding. One of the judges, Raymond Randolph, in a dissenting opinion criticized former NRC Chairman Gregory Jaczko, saying he "orchestrated a systematic campaign of noncompliance" with the law by halting the Yucca Mountain review.

Aiken County, South Carolina, three other government bodies, a regulatory group and several individuals are suing to force NRC to resume the licensing review of the Department of Energy facility. DOE dismantled the program in 2010, citing, in part, opposition from Nevada.

The one-sentence order from the court holds the case in abeyance and orders parties to file in December an update of the status of fiscal 2013 appropriations. Fiscal 2013 begins October 1. In his concurrence with the order,

<http://www.platts.com/RSSFeedDetailedNews/RSSFeed/ElectricPower/6526717>

Lockheed sees more Middle East missile-defense

demand By Jim Wolf, Reuters, Aug 14, 2012

Aug 14 (Reuters) - Saudi Arabia and its closest regional partners have shown interest in buying the most advanced Lockheed Martin Corp missile-defense system to counter perceived threats, executives of the Pentagon's top supplier said on Tuesday.

"Look, all of the (Gulf Cooperation Council) nations have an interest," Dennis Cavin, a company vice president for army and missile-defense programs, told a teleconference. The GCC is a political and economic alliance linking Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain and Oman.

Lockheed, the Pentagon's No. 1 supplier by sales, received an initial \$1.96 billion contract in December for two of its Terminal High-Altitude Area Defense (THAAD) weapon systems for the United Arab Emirates.

This marked the first foreign sale of the system, coming as tensions with Iran have risen over its disputed nuclear program. Such foreign sales are increasingly important to U.S. arms makers as the Pentagon's budget flattens because of U.S. deficit-reduction requirements.

<http://www.reuters.com/article/2012/08/14/missile-mideast-lockheed-idUSL2E8JEHOR20120814?feedType=RSS&feedName=technologySector>

Key U.S. Findings on Iran Nuclear Program Unchanged, Insiders Say

NTI, August 10, 2012

Obama administration sources on Thursday denied any alterations to the

U.S. intelligence determination that Iran is not close to possessing a nuclear weapon and that its leaders have not formally committed to acquiring such an armament, Reuters reported (see GSN, Aug. 9).

An Israeli newspaper this week said President Obama had received a National Intelligence Estimate asserting that Iran had achieved major, unexpected steps in weapon-relevant atomic endeavors. The United States, Israel and a number of European nations suspect Iran is using its atomic program as cover for development of a nuclear-bomb capacity; Tehran has maintained the effort is strictly peaceful.

The Israeli press claims are inaccurate, according to a White House National Security Council spokesman.

The official said U.S. findings on Iran's atomic initiative have remained consistent following statements issued to lawmakers by intelligence authorities previously in 2012. The heads of U.S. intelligence agencies indicated they do not believe Iran's leaders have made an official decision to seek a nuclear weapon.

<http://www.nti.org/gsn/article/key-intel-findings-iran-unchanged-us-insiders/>

B.Europe

France details nuclear waste inventory *World Nuclear News*, August 06, 2012

France had an inventory of radioactive wastes totalling some 1.32 million cubic metres in 2010, according to the latest data released by the national radioactive waste management agency Andra. This is a 12.9% increase from the 1.15

million cubic metres in 2007.

Waste from the nuclear power industry accounted for 59% of the total inventory as of 31 December 2010, while the remainder came from research (26%), defence (11%), industrial nuclear applications (3%) and medical applications (1%).

High-level waste (HLW), accounting for just 0.2% of the total waste volume in 2010 (2700 m³), represents 96% of its radioactivity. The amount of HLW that France has increased by 400 m³ between 2007 and 2010. HLW, which mainly comes from the reprocessing of used fuel from nuclear power plants, is destined for disposal in the Centre Industriel de Stockage Géologique (Cigeo) repository being designed by Andra.

The majority (830,000 m³) of France's radioactive waste in 2010 was short-lived low- and intermediate-level waste (LLW/ILW). These are mainly associated with the operation and maintenance of nuclear facilities. While accounting for 63% of the total waste by volume, this LLW/ILW represents just 0.02% of the entire radioactivity of the waste.

http://www.world-nuclear-news.org/WR-France_details_nuclear_waste_inventory-0608124.html

Britain Gives Nuclear a 2nd Chance

STANLEY REED,

New York Times, August 8, 2012

HINKLEY POINT, ENGLAND — Along an old Roman road called Green Lane, purple thistles and scarlet poppies wave in the breeze. If things go according to the plans of EDF Energy, the British subsidiary of the French state-owned utility EDF, this verdant hillside overlooking the Bristol Channel in southwest England will be the site of two gigantic nuclear power stations —

the first to be built in Britain since the mid-1990s.

In a turnabout from the late 20th century, the British government is courting the nuclear industry. It wants low-carbon power to aid its goal, enshrined in law, of reducing greenhouse gas emissions 80 percent from 1990 levels by 2050. About 18 percent of Britain's power now comes from nuclear sources, but several of those aging plants are scheduled to be retired in the next few years along with pollution-belching coal-fired generators.

The government has identified eight sites, all with existing nuclear facilities, where new ones might go. The Hinkley Point reactors would provide about 6 percent of Britain's power supply — enough for five million homes. A visit to Hinkley Point makes one think EDF is serious. Workers in yellow uniforms and hard hats are starting preparations for the construction which would take nine years, as they wait for a final go-ahead from the company and the government...

http://www.nytimes.com/2012/08/09/business/energy-environment/09iht-green09.html?_r=1

Quick decommissioning in Germany

World Nuclear

News, August 03, 2012

Two of the German reactors ordered to shut after Fukushima will be dismantled as soon as possible. EnBW has applied for permission to do the work and said it has more than enough funds set aside.

Neckarwestheim 1 and Philippsburg 1 were both among the older reactor units that Chancellor Angela Merkel forced to close early in the week of the Fukushima accident in March

2011. Built in 1976 and 1981 respectively, their operation had been set to continue until 2017 and 2026. Merkel's move, however, brought their power generation careers to an abrupt end.

Normal practice in nuclear decommissioning allows time for radioactive decay before the main components and buildings are tackled. Sometimes a reactor building is sealed up and put in a 'safe storage' mode to allow radioactive decay to the point that the work can take place under normal industrial regulation rather than nuclear regulation.

This kind of postponement makes the work easier and cheaper to carry out while also allowing more time for decommissioning funds to grow. During their lifetimes, Neckarwestheim 1 and Philippsburg 1 produced over 186 and 187 billion kWh of electricity respectively.

Had Germany stuck to its 2010 negotiated policy, they would have probably produced a further 31 billion and 89 billion kWh. Despite this loss of income and corresponding payments to its decommissioning fund, EnBW said it still has more than enough money for decommissioning and waste disposal.

http://www.world-nuclear-news.org/WR_Quick_decommissioning_in_Germany_0308121.html

C. Russia and Central Asia

Nuclear Submarine to Serve Decade After Refit *RIA Novosti*, August 13, 2012

The Russian Navy's submarine Novomoskovsk has been refitted and returned to service with the Northern Fleet, and will serve another ten years before being decommissioned in 2022,

Fleet Spokesman Captain First Rank Vadim Serga said on Monday.

The Project 667 type boat (NATO Delta 4) arrived at its base in the port of Severomorsk on Monday after the refit at the Zvezdochka shipyard at nearby Severodvinsk.

"The boat's life after refit and modernization will be extended by another ten years," Serga said.

The refit of the Novomoskovsk included hundreds of improvements, "making the boat quieter, increasing its ability to detect other submarines, increasing its survivability and nuclear safety," he added. Novomoskovsk is the second Northern Fleet 667 boat to be refitted. Last year, the Verkhoturye underwent a similar refit at Zvezdochka and was returned to service.

http://en.rian.ru/military_news/20120813/175182664.html

First Borey Class Subs to be Deployed in Pacific *RIA Novosti*, August 8, 2012

Russia's first two Borey class strategic submarines will be ultimately deployed with the Pacific Fleet, First Deputy Defense Minister Alexander Sukhorukov said on Wednesday.

The Yury Dolgoruky and the Alexander Nevsky vessels are undertaking test runs in the White Sea and are expected to be commissioned by the end of 2012.

"I am absolutely certain that the first two subs will be initially placed with the Northern Fleet and will be redeployed to the Pacific Fleet after all the infrastructure there is ready," Sukhorukov said.

Two more Borey class submarines are under construction at the Sevmash

shipyard in the port city of Severodvinsk on the White Sea. The Russian Navy is expected to receive at least ten Borey class submarines by 2020. The submarines, to be armed with Bulava ballistic missiles, will constitute the core of Russia's strategic submarine force after 2018.

http://en.rian.ru/military_news/20120808/175074099.html

Skyrocketing costs of launching 'new' nuclear submarine flex muscles Russia does not have Charles Digges, *Bellona*, August 14, 2012

The Severodvinsk, the flagship for the new Yasen class of large scale Russian submarines, has failed sea trials in the White Sea, revealing reactor power problems, noisy operation, untested missile equipment, faulty components and huge cost overruns that will cause further problems and setbacks for the vessel's scheduled serial production.

A military source told Russian papers that the navy was laying most of its chips on the table with the Yasen design, saying its status as a multipurpose nuclear sub means it will be a first alert "against missile cruisers from western countries."

But an anonymous Ministry of Defense source cited by the Russian newsire interfax said the Severodvinsk is hardly up to that task after the results of its sea trials were known. "The Severodvinsk tests revealed that its nuclear power unit did not reach the rated capacity, and the submarine produced too much noise," the defense Ministry source told Interfax.

"It is impossible to commission the submarine with such serious shortcomings," he said.

Designed during Soviet times, the

Severodvinsk is outfitted with 24 supersonic Onyx anti-ship missiles that can destroy an aircraft carrier in one blow, and 10 torpedo tubes for launching self-guided torpedoes – topping its closest American competitor by six.

http://www.bellona.org/articles/articles_2012/severdovinsk_delay

U.S., Netherlands and Kazakhstan Commission Secure Radiological Transportation Vehicle *The journal of Turkish Weekly*, August 09, 2012

The U.S. National Nuclear Security Administration (NNSA) joined the Governments of Kazakhstan and the Netherlands in announcing the commissioning of a secure radiological transportation vehicle as part of a broader cooperative effort to help combat nuclear and radiological terrorism around the world.

The delivery of the secure radiological transportation vehicle to the Institute of Atomic Energy (IAE) - National Nuclear Center (NNC) of Kazakhstan is the latest accomplishment under a partnership between the NNSA, the Kingdom of the Netherlands, and the Republic of Kazakhstan.

In a ceremony today at the NNC in Kurchatov, Ambassador Kenneth J. Fairfax highlighted the addition of the new vehicle as an example of the cooperation between the three countries to prevent nuclear terrorism, according to the press service of the U.S. Embassy in Astana.

"Our partnership here in Kurchatov and throughout Kazakhstan underscores a continued, shared commitment to the security of radioactive material," said NNSA Deputy Administrator for Defense

Nuclear Nonproliferation Anne Harrington. "With the commissioning of this secure transportation vehicle, we have enhanced the level of radiological security in Kazakhstan—a key partner in the region."

<http://www.turkishweekly.net/news/139994/u-s-netherlands-and-kazakhstan-commission-secure-radiological-transportation-vehicle.html>

Poland Calls 'Mistake' Cooperation with U.S. over Missile Defense – President

RIA Novosti, August 4, 2012

Poland needs its own missile defense shield while the agreement with the United States on the deployment of an anti-ballistic-missile defense system on its territory was "a mistake," Polish President Bronislaw Komorowski said in an interview with the *Wprost* magazine, published on Saturday.

"We must have this element of the Polish defense [missile defense system]. Spending large sums on military hardware is actually meaningless if it is not secured from... the missile attack and air raids," Komorowski said, adding that Polish shield must be a part of the existing European missile defense system.

The president also said that the agreement to deploy the U.S. anti-ballistic-missile defense system on the Polish territory which was later scrapped by the U.S. President Barack Obama, has been "a political mistake" that should not be repeated in future.

"Our mistake was that while accepting the U.S. proposal, we have not taken into account a political risk related to the change of the U.S. president.

<http://en.ria.ru/world/20120804/174979250.html>

Kazakhstan and IAEA to have another round of talks on hosting an international nuclear fuel bank

Tengri News, August 15, 2012

Kazakhstan and the International Atomic Energy Agency will have another round of talks on hosting an international nuclear fuel bank in the Kazakh territory; the talks will be held in Vienna this coming fall, *Newskaz.ru* reports, citing KazAtomProm National Nuclear Company Head Vladimir Shkolnik as saying August 15.

A nuclear fuel bank is a proposed approach to provide countries access to enriched nuclear fuel, without the need for them to possess enrichment technology. The basic concept is that countries who do have enrichment technology would donate enriched fuel to a "bank", from which countries not possessing enrichment technology would obtain fuel for their power reactors.

Back in 2009 Kazakhstan's President Nursultan Nazarbayev suggested hosting an international nuclear fuel bank in the Kazakh territory. The idea was approved of by the IAEA in 2011. The Kazakh Agency for Nuclear Power was launched May 7, 2012.

The IAEA is the world's center of cooperation in the nuclear field. It was set up in 1957 as the world's "Atoms for Peace" organization within the United Nations family. The Agency works with its Member States and multiple partners worldwide to promote safe, secure and peaceful nuclear technologies.

http://en.tengrinews.kz/industry_infrastructure/Kazakhstan-and-IAEA-to-have-another-round-of-talks-on-hosting-an-international-12243/

D. West Asia

White House says still “time and space” for diplomacy on Iran *Xinhuanet*, August 14, 2012

WASHINGTON, Aug. 13 (Xinhua) — The White House on Monday reiterated that there is still “time and space” for diplomacy in dealing with Iran’s nuclear standoff, vowing to continue the two-track approach of diplomacy and pressure.

“We regret that Iran has not yet made a strategic decision to address the international community’s serious concerns regarding its nuclear program and the ongoing P5-plus-1 talks,” White House spokesman Jay Carney told reporters at a press briefing. “However, we continue to believe that there is time and space for diplomacy. “

His remarks came at a time when Israeli media reported that the decision by the Jewish state to attack Iran’s nuclear sites was looming. Carney stressed that “opportunity remains” for a peaceful resolution of the stalemate if Iran takes necessary steps to comply with its international obligations.

The West has long been accusing Tehran of secretly developing nuclear weapon, while Iran has always rejected such claim. The P5+ 1, namely world powers including the United States, Russia, France, Britain, China and Germany, have held numerous rounds of negotiations with Iran in order to solve the logjam, but so far no substantial results have been achieved.

http://news.xinhuanet.com/english/world/2012-08/14/c_123578577.htm

Saudi Arabia allegedly warns it will intercept

Israeli jets en route to Iran *AL ARABIYA WITH AGENCIES*, August 09, 2012,

Saudi Arabia has warned that it will intercept Israeli fighter jets that enter its airspace en route to an attack on Iran, UPI news reported on Thursday citing the Hebrew daily Yedioth Ahronoth.

The report comes as the delivery of an upgraded interceptor currently being installed on Israel’s Arrow anti-missile batteries is believed to ramp up its ability to cope with threats from Syria and Iran, defense experts said on Thursday.

In the event of a military strike on Iran’s nuclear sites, Israel has three route options: a northern route, which requires flying over Turkey and Syria; a southern route over Saudi Arabia; or a central route over Jordan and Iraq, UPI reported.

Saudi Arabia’s warning has been amplified by Washington and U.S. administration officials who recently visited Jerusalem. According to sources in Jerusalem quoted by Yedioth Ahronoth, this information is a new attempt by Washington to prevent an imminent Israeli operation against Tehran’s nuclear facilities.

<http://english.alarabiya.net/articles/2012/08/09/231336.html>

U.S. and Gulf Allies Pursue a Missile Shield Against Iranian Attack By THOM SHANKER, *New York times*, August 8, 2012

WASHINGTON — The United States and its Arab allies are knitting together a regional missile defense system across the Persian Gulf to protect cities, oil refineries, pipelines

and military bases from an Iranian attack, according to government officials and public documents.

It is an enterprise that is meant to send a pointed message to Tehran, and that becomes more urgent as tensions with Iran rise. But it will require partner nations in the gulf to put aside rivalries, share information and coordinate their individual arsenals of interceptor missiles to create a defensive shield encompassing all the regional allies.

Secretary of State Hillary Rodham Clinton, among the first to raise the need for the missile shield three years ago, sought to spur the gulf allies on during a recent visit to Saudi Arabia. "We can do even more to defend the gulf through cooperation on ballistic missile defense," she said during a session in March of the Gulf Cooperation Council, which includes Bahrain

http://www.nytimes.com/2012/08/09/world/middleeast/us-and-gulf-allies-pursue-a-missile-shield-against-iranian-attack.html?_r=1

Iran to Make own WMD if Israel Delivers Airstrike - expert *RIA Novosti, August 08, 2012*

Israeli airstrikes on Iranian nuclear facilities are possible but in case they are delivered they will have small impact on Iran and on the contrary will push Tehran into producing weapons of mass destruction, former Russian Prime Minister Yevgeny Primakov told *Rossiiskaya Gazeta* daily.

"The United States does not want this airstrike to be delivered before the presidential election. They [the U.S.] are restraining Israel. But we must understand that both American and Israeli administrations have various [political] forces that express different

positions," Primakov, who is also an expert on the Middle East, said.

Primakov said Iran is capable to recover in two years in case it is subjected to an airstrike, but after this period Tehran will withdraw from the Nuclear Weapons Non-proliferation Treaty and will start making its own weapons of mass destruction.

Israel and Western powers suspect Iran of seeking to build nuclear weapons. Iran denies this, saying its program is of a civilian nature. Israel has recently stepped up its verbal threats to attack Iran if it does not abandon its nuclear ambitions.

<http://en.rian.ru/world/20120808/175057044.html>

Iranians 'confess' to nuclear scientist murders on state television *Associated Press, August 06, 2012*

Iranian state television on Sunday broadcast purported confessions by more than a dozen suspects in connection with the killing of five nuclear scientists since 2010. The broadcast showed some of the suspects re-enacting the assassinations in different districts of the capital, Tehran. The 14 suspects shown on TV included eight men and six women.

The TV showed pictures from a military garrison it said was a training camp outside Tel Aviv in Israel. It said the suspects took courses there, including how to place magnetic bombs on cars – the method used in the killing of the scientists. Iran says the attacks are part of a covert campaign by Israel and the west to sabotage its nuclear programme, which the US and its allies suspect is aimed at producing

nuclear weapons. Iran denies that.

Iran's intelligence chief, Heidar Moslehi, had promised recently to provide detailed TV pictures about the case. Iran has blamed the Mossad as well as the CIA and MI6 for the assassinations, with support from some of Iran's neighbours. The US and Britain have denied involvement in the killings. Israel has not commented.

<http://www.guardian.co.uk/world/2012/aug/06/iranians-confess-nuclear-scientist-murders/print>

Iran Nuclear Program: U.S. Believes Iran Not On Verge Of Nuclear Weapon *Reuters,*

August 09, 2012

WASHINGTON, Aug 9 (Reuters) - The United States still believes that Iran is not on the verge of having a nuclear weapon and that Tehran has not made a decision to pursue one, U.S. officials said on Thursday. Their comments came after Israeli media reports claimed U.S. President Barack Obama had received a new National Intelligence Estimate saying Iran had made significant and surprising progress toward military nuclear capability. Later, Israeli Defense Minister Ehud Barak suggested that the new U.S. report, which he acknowledged might be something other than a National Intelligence Estimate, "transforms the Iranian situation into an even more urgent one."

But a White House National Security Council spokesman disputed the Israeli reports, saying the U.S. intelligence assessment of Iran's nuclear activities had not changed since intelligence officials delivered testimony to Congress on the issue earlier this year.

"We believe that there is time and space to continue to pursue a

diplomatic path, backed by growing international pressure on the Iranian government," the spokesman said. "We continue to assess that Iran is not on the verge of achieving a nuclear weapon." U.S. officials would not directly comment on whether there was a new National Intelligence Estimate on Iran, which is a compilation of views of the various U.S. intelligence agencies.

http://www.huffingtonpost.com/2012/08/09/iran-nuclear-program-us_n_1762134.html?view=print&comm_ref=false

Iran Preparing to Lead Global Nonaligned Group

THOMAS ERDBRINK, *New York*

Times, August 13, 2012

TEHRAN — Iran sometimes seems like one of the loneliest countries in the world, isolated by sanctions and shunned by Western leaders. But in Tehran lampposts are being painted and hotels cleared out for thousands of delegates, including, the government says, more than 40 heads of state, as the Islamic republic prepares to host its biggest international conference in 14 years.

Taking over from Egypt, Iran's leaders are ambitiously readying themselves for their three-year term as head of the Nonaligned Movement, which will convene in Tehran in the last week of August. The Nonaligned Movement, founded during the height of the cold war, when the divisions were chiefly East-West, regards itself as independent from the major centers of power, which are not quite as neatly lined up as before.

During a weeklong conference, followed by a leadership summit meeting, Iran says it will unfold plans to revitalize the movement and seek support for its nuclear enrichment program and its resistance to what it

calls dominance by the United States.

Representatives of all of the 118 member nations, among them China, India and Indonesia, will travel to Tehran for the conference, while invitations have been extended to observer states and international organizations, such as the Arab League, and Russia's president, Vladimir V. Putin.

http://www.nytimes.com/2012/08/14/world/middleeast/iran-to-host-nonaligned-movement-meeting-and-take-leadership.html?_r=1

Israeli Minister Asks Nations to Say Iran Talks Have Failed JODI RUDOREN,

New York Times, August 12, 2012

JERUSALEM — Amid intensifying Israeli news reports saying that Prime Minister Benjamin Netanyahu is close to ordering a military strike against Iran's nuclear program, his deputy foreign minister called Sunday for an international declaration that the diplomatic effort to halt Tehran's enrichment of uranium is dead.

Referring to the Iran negotiations led by the five permanent members of the United Nations Security Council plus Germany, the minister, Danny Ayalon, told Israel Radio that those nations should "declare today that the talks have failed." After such a declaration, if Iran does not halt its nuclear program, "it will be clear that all options are on the table," Mr. Ayalon said, not only for Israel, but also for the United States and NATO. Asked how long the Iranians should be given to cease all nuclear activity, Mr. Ayalon said "weeks, and not more than that."

The comments came after a frenzy of newspaper articles and television reports over the weekend here suggesting that Mr. Netanyahu had all but made the decision to attack Iran

unilaterally this fall. The reports contained little new information, but the tone was significantly sharper than it had been

http://www.nytimes.com/2012/08/13/world/middleeast/time-to-call-diplomatic-effort-on-iran-a-failure-israeli-official-says.html?_r=2

Israel hasn't decided on Iran strike: Pentagon Phil

Stewart, *Reuters*, Aug 14 2012

WASHINGTON (Reuters) - The United States does not believe Israel has made a decision on whether to attack Iran over its nuclear program, U.S. Defense Secretary Leon Panetta said on Tuesday, following sharp rhetoric from Israeli officials that has put financial markets on edge.

Panetta, who visited Israel two weeks ago, told reporters at the Pentagon it was important that military action be the "last resort" and said there was still time for sanctions and diplomatic pressure to work.

That contrasts with Israeli warnings in recent days about the possibility of a strike. Israel's envoy to Washington, Michael Oren, said on Monday in a CNN interview that the window of time before the need to resort to military action was "small and the window is getting smaller." He acknowledged that Israel's clock was ticking faster than Washington's.

Asked about comments by Israeli officials, Panetta said: "I don't believe they've made a decision as to whether or not they will go in and attack Iran at this time." "With regards to the issue of where we're at from a diplomatic point of view, the reality is that we still think there is room to continue to negotiate," he said.

<http://www.reuters.com/article/2012/08/14/us-usa-israel-iran-idUSBRE87DOV320120814>

Israel willing to hit Iran, even to delay nuke program'

Jerusalem Post, August 06, 2012

Ambassador to US Michael Oren points to Osirak reactor in Iraq: "In the past, we have operated on the assumption that we can only gain a delay"; Uzi Dayan says Jerusalem hasn't yet decided to strike. Israel is willing to strike Iran's nuclear facilities even if doing so only delays the Islamic Republic's nuclear progress for a few years, Ambassador to Washington Michael Oren told Bloomberg News Wednesday.

"One, two, three, four years are a long time in the Middle East - look what's happened in the last year," he said in reference to the ongoing upheaval throughout the Arab world.

When Israel struck at an Iraq reactor in 1981, the military assumption was "we would gain a delay of between one and two years on that program," Oren said.

<http://www.jpost.com/IranianThreat/News/Article.aspx?id=281414>

All threats "dwarfed" by Iran nuclear work - Israel PM

By Dan Williams, *Reuters*, August 12, 2012

JERUSALEM, Aug 12 (Reuters) - Prime Minister Benjamin Netanyahu said on Sunday that most threats to Israel's security were "dwarfed" by the prospect of Iran obtaining nuclear weaponry, which local media reports charged Tehran had stepped up its efforts to achieve.

The comments at a weekly cabinet meeting and the front-page reports in the liberal Haaretz, a frequent Netanyahu critic, and in the

conservative, pro-government Israel Hayom came as Israeli debate intensified about whether to go to war against Iran - and soon - over its disputed atomic projects.

The debate seemed to defy appeals by U.S. President Barack Obama, seeking re-election in November, to allow more time for international diplomacy. Tehran says its nuclear ambitions are peaceful and has threatened wide-ranging reprisals if attacked.

In comments also broadcast live by Israeli media, Netanyahu said that "all the threats currently being directed against the Israeli home front are dwarfed by another threat, different in scope, different in substance."

<http://in.reuters.com/article/2012/08/12/iran-nuclear-israel-usa-idINL6E8JC18D20120812>

UAE awards nuclear fuel contracts

World Nuclear News, August 15, 2012

The Emirates Nuclear Energy Corporation (Enec) has awarded a series of contracts related to the supply of fuel for the United Arab Emirates' (UAE's) first nuclear power plant. The contracts will ensure sufficient fuel for the first 15 years of operation of the Barakah plant.

Following the launch of a nuclear fuel procurement competition in July 2011, Enec has now awarded six contracts related to the supply of natural uranium concentrates, conversion and enrichment services, and the purchase of enriched uranium product. The company estimates the contracts are worth some \$3 billion and will enable the Barakah plant to generate up to 450 terawatt-hours (TWh) of electricity

over a 15-year period starting in 2017, when the first of four units at the plant is scheduled to begin operating.

Under the contracts, both France's Areva and Russia's Technobexport (Tenex) have been contracted to provide services across the front-end of the fuel cycle, including the supply of uranium concentrates, as well as conversion and enrichment services. Meanwhile, Canada-based Uranium One and UK-based Rio Tinto will also supply natural uranium, the USA's Converdyn will provide conversion services and UK-headquartered Urenco will provide enrichment services.

<http://in.reuters.com/article/2012/08/15/uae-nuclear-contracts-idINL6E8JF3IE20120815>

Report: Syrian rebels acquired surface to air missiles- Haaretz

Jack Khoury, *Haaretz*, August 05, 2012

Syria has received Soviet-built Mi-24 helicopter gunships, some require major repairs that can only be done by Russian repair plants. Rebels fighting to depose Syrian president Bashar Assad have for the first time acquired a small supply of surface-to-air missiles, according to a news report that a Western official did not dispute. A Free Syrian Army spokesperson denied the report.

NBC News reported Tuesday night that the rebel Free Syrian Army had obtained nearly two dozen of the weapons, which were delivered to them via neighboring Turkey, whose moderate Islamist government has been demanding Assad's departure with increasing vehemence.

Indications are that the U.S. government, which has said it opposes arming the rebels, is not responsible for the delivery of the missiles. But

some U.S. government sources have been saying for weeks that Arab governments seeking to oust Assad, including Saudi Arabia and Qatar, have been pressing for such missiles, also known as MANPADs, for man-portable air-defense systems, to be supplied to the rebels.

In recent days, air operations against the rebels by Syrian government forces appear to have been stepped up, particularly around the contested city of Aleppo, making the rebels' need for MANPADs more urgent. Precisely what kind of MANPADs have been delivered to Syrian rebels is unclear and NBC News did not provide details. Such weapons range from the primitive to highly sophisticated.

<http://www.haaretz.com/news/middle-east/report-syrian-rebels-acquired-surface-to-air-missiles-1.455228>

E. China and East Asia

Washington pushes China to get serious about sanctions

Sharon Squassoni, *Global Times*, August 09, 2012

Chinese officials have been protesting US penalties against China's Bank of Kunlun for Iran-related activities. According to the US Department of the Treasury, the bank has conducted significant financial transactions for sanctioned banks in Iran as well as making payments for an affiliate of Iran's Islamic Revolutionary Guard Corps.

The penalties, which affect the bank's ability to conduct business in the US, were imposed under the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010.

The handwriting is on the wall. China is Iran's largest remaining trading

partner. And China National Petroleum Corporation, which owns the bank, and other Chinese entities have invested billions of dollars in Iran's petroleum sector, now the focus of international pressure.

This latest round of penalties follows sanctions earlier this year against Zhuhai Zhenrong Company, China's largest importer of Iranian crude oil. The company allegedly exported gasoline to Iran in 2010 and 2011. Given Iran's heavy reliance on oil revenue, there is finally evidence of real economic pressure mounting.

Historically, the US has been reluctant to impose sanctions on third parties. There have been few good levers, such as government contracts or military or foreign assistance, all of which are controversial to use, and US allies have complained bitterly about extraterritoriality.

<http://www.globaltimes.cn/content/726144.shtml>

North Korea Able to Test Nukes in Two Weeks, Study Says David Lerman, *Bloomberg*,

August 08, 2012

North Korea is technically capable of conducting a nuclear test in as little as two weeks, according to a study published by the Bulletin of the Atomic Scientists.

Commercial satellite imagery shows an underground tunnel has been prepared for containing a nuclear explosion near the sites used for the regime's two earlier tests in 2006 and 2009, according to the study written by Siegfried Hecker, a scholar on North Korea's nuclear program at Stanford University in California, and Frank Pabian, a geospatial information analyst at the Los Alamos National Laboratory.

A third test would be the first authorized by new North Korean leader Kim Jong Un, who took power after the death of his father in December. A demonstration of the country's nuclear capability would raise tensions on the Korean Peninsula at the same time the U.S. and Israel are threatening possible military action to thwart Iran's advances toward being able to produce its first atomic weapon.

South Korea said in April that the North may conduct a nuclear test to bolster public support at home after the failure of a long-range missile launch. While North Korea in May denied immediate plans for a nuclear test, it said two months later that it is reviewing its nuclear capabilities against South Korean and U.S. threats.

<http://www.businessweek.com/printer/articles/303588?type=bloomberg>

North Korea Threatens Harder Line in Nuclear Talks *Voice of America*, August 03, 2012

A senior North Korean official says Pyongyang intends to harden its opposition to international pressure against its nuclear weapons program. Choi Sun Hee, a deputy director of North Korea's Foreign Ministry, sent a rare note by e-mail to VOA's Korean Service Thursday, following three days of informal talks between North Korean diplomats and an unofficial American delegation.

Choi said she led the North Korean team at the talks in Singapore this week. She says, as a result of the talks, her government has no choice but to re-examine the nuclear issue due to Washington's "firm hostile policies" toward it. Says, unless there is a change on the U.S., "The prospect

of denuclearization” by North Korea is very remote.

The note said, “If the U.S. sincerely engages in dialogue and withdraws its hostile policies – not through words but through action – to resolve the nuclear issue and improve the relations between the two sides, we will be willing to work to resolve the issues.”

<http://blogs.voanews.com/breaking-news/2012/08/03/north-korea-threatens-harder-line-in-nuclear-talks/>

Update on North Korean Light Water Reactor Construction Project

By David Albright and Robert Avagyan, *Institute for Science and International Security*, August 14, 2012

Light Water Reactor: Satellite imagery spanning May and June 2012 shows construction progressing apace at the Yongbyon experimental light water reactor (LWR). New construction material has been placed on and near the reactor building.

This building has yet to be covered with the dome that has been resting adjacent to the building since November 2011. Apart from the dome, other major external work on the reactor and adjacent building seems to be complete with most of the activity occurring inside the reactor building.

Cranes can be seen around the building in the May 3, 2012 imagery (figure 1). By June 5, 2012, a rectangular steel structure of considerable height is erected adjacent to the northern façade of the reactor building (figure 2).

In June 24, 2012 GeoEye imagery, two metal beams appear to have been placed across the open roof of the reactor chamber (figure 3). These new

additions could serve to lift and lower heavy components into the reactor building.

http://isis-online.org/uploads/isis-reports/documents/Yongbyon_site_imagery_brief_14Aug2012.pdf

Nuclear-free not bad for economy: Edano

AFP-Jiji, Jiji, August. 8, 2012

Industry minister Yukio Edano waded into the national debate on energy policy Tuesday, saying the nation could phase out nuclear power by 2030 without hurting the world’s third-largest economy. “We can do it,” Edano told reporters in Tokyo when asked what the impact of Japan ditching its stable of nuclear reactors would be. Most have been shut down.

“I don’t think the zero scenario is negative for Japan’s economy. On the contrary, it can create growth as efforts to develop renewable energy and improve energy-efficiency could boost domestic demand,” he added.

Tokyo ushered in new rules last month that require utilities to buy all electricity produced from renewable sources, including solar and wind power, at above-market rates for two decades, to stoke “green” power investment.

Edano meanwhile also said he opposes Prime Minister Yoshihiko Noda’s plan to meet with an antinuclear citizen’s group. Such a meeting between the prime minister and a specific organization may send the wrong signal in terms fairness and transparency, Edano said.

<http://www.japantimes.co.jp/text/nn20120808a4.html>

DPJ vow for next poll: a nuclear phaseout *Kyodo,*

August. 14, 2012

Prime Minister Yoshihiko Noda's party is arranging to make a nuclear phaseout a key policy pledge in the next general election, sources in the Democratic Party of Japan said.

The DPJ's plan comes amid widespread opposition to the continued use of nuclear energy. Noda has drawn strong public protests over his recent decision to approve the restart of two reactors at the Oi power plant in Fukui Prefecture, the first reactivations since all of the country's reactors went offline amid the Fukushima nuclear disaster that started last year.

Many DPJ lawmakers fear the ruling party, via the restarts, signalled to the public that it is keen on using nuclear power when this is not the case, a senior party member said Sunday. DPJ members said earlier this month that the DPJ will set up a panel to discuss the potential pledge for the House of Representatives election, which Noda said last week will take place "soon."

<http://www.japantimes.co.jp/text/nn20120814a1.html>

Close to 70 percent favor zero nuclear plants in 2030 *THE ASAHI SHIMBUN,* August 7, 2012

The people have spoken, and what close to 70 percent of participants have indicated in a series of public hearings on the nation's energy policy is that Japan should be free of nuclear power by 2030.

That puts the central government in a bind as it runs contrary to the desires of the business sector, which wants nuclear power maintained in the

nation's energy policy to ensure a stable electricity supply. The series of 11 public hearings around Japan began on July 14 in Saitama and ended on Aug. 4 with separate sessions in Takamatsu on Shikoku and Fukuoka on Kyushu.

The central government presented three options for the ratio of electricity to be generated by nuclear energy in 2030—0 percent, 15 percent or between 20 and 25 percent. Participants at the public hearings who wished to give their opinion were first asked to choose from one of the options before a selection was made of those who would be allowed to speak.

At the Aug. 1 session held in Fukushima city, participants were selected without requiring them to state which option they preferred. The crippled Fukushima No. 1 nuclear power plant is located in the same prefecture, so the overwhelming majority of speakers urged a quick end to dependence on nuclear energy.

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201208060006>

Japan seeks to lessen nuclear energy use

Associated Press, August 9, 2012

Tokyo — Japanese officials pledged to seek a society less reliant on nuclear energy as the country marked the 67th anniversary of the atomic bombing of Nagasaki on Thursday. About 6,000 people gathered at a peace park near the epicenter of the 1945 blast, including students and the mayor of one of the towns most affected by last year's nuclear plant disaster.

Almost a year and a half after the world's second worst accident at a

nuclear power plant, concerns about the safety of nuclear energy and radiation effects persist. Nagasaki Mayor Tomihisa Taue said the accident at the Fukushima Dai-ichi plant, which was crippled by a tsunami last March, has exposed the risk of nuclear technology. Taue urged Japan to make concrete plans for a nuclear-free society and called for renewed commitment to a global ban on nuclear weapons.

“Many people in Fukushima still live in fear of radiation effects,” Taue said. Prime Minister Yoshihiko Noda renewed his promise to seek a society less reliant on nuclear power in a mid-to long-term policy platform due out within weeks. “We will compile an energy structure that would reassure the safety of the people,” he said.

<http://www.sfgate.com/world/article/Japan-seeks-to-lessen-nuclear-energy-use-3777467.php#ixzz23hHf694U>

China nuclear tests prompt Uighur campaign *Kyodo,*

August 09, 2012

HIROSHIMA — Uighur residents in Japan and their support organization have been campaigning to raise awareness about nuclear tests conducted by China in the country’s northwestern Uighur autonomous region, saying they have been harmful to people’s health.

On Aug. 6, the anniversary of the atomic bombing of the city of Hiroshima by the United States, some residents and supporters distributed leaflets to visitors of the Peace Memorial Park in the city’s Naka Ward.

Ilham Mahmut, the 42-year-old leader of the Japan Uyghur Association, said that since the Chinese government claims it does not conduct research (in the area), it remains unknown what

exactly has been taking place. Ilham said the group would like to step up its campaign in Hiroshima to press authorities to shed light on what has been happening.

According to the association and other sources, a nuclear test site is located in a desert area in Lop Nur in the eastern region of the Xinjiang Uighur autonomous region. The Beijing government is believed to have conducted a total of 45 blasts between 1964 and 1996. While no authoritative data have been compiled, there have been reports of birth defects and people contracting leukemia. One study said more than 1 million people have been adversely affected by radioactive fallout.

<http://www.japantimes.co.jp/text/nn20120809a3.html>

Vietnam to get help in creating redress plan for any nuclear accident *Jiji,*

August 16, 2012

HANOI, Vietnam — Japan and Vietnam have signed a memorandum of understanding to help Hanoi to improve its redress system for future damages arising from nuclear accidents.

Under the accord inked Tuesday by visiting industry minister Yukio Edano and Vietnamese Minister of Science and Technology Nguyen Quan in Hanoi, Japan will offer assistance based on its experience of the Fukushima nuclear crisis.

Vietnam plans to start up a nuclear plant in Ninh Thuan Province in 2020, but its current system for compensating locals over nuclear-related damages is considered insufficient. The two countries will set up a joint committee to overhaul the process.

First phase construction work on the power station will be undertaken by Russia, with Japan overseeing the project's second phase. Edano held a separate meeting with Minister of Natural Resources and Environment Nguyen Minh Quang earlier in the day to discuss a joint rare earth development program.

<http://www.japantimes.co.jp/text/nn20120816b1.html>

F.India

No defects in Kudankulam nuclear reactor: V

Narayanasamy PTI Aug 8, 2012, 05.46PM IST

NEW DELHI: India's nuclear regulator has found no defects in the reactor pressure vessel of the Kudankulam atomic power plant, the Lok Sabha was informed today. "The inspection of the reactor pressure vessel has been completed in Unit-1. The report of inspection has been submitted to the Atomic Energy Regulatory Board (AERB). No defects have been noticed during final inspections,"

Minister of State in the PMO V Narayanasamy said in reply to a written question in the Lok Sabha. He said after completing the inspection, application for fuel loading has been submitted to the regulatory authorities.

"This will be followed by fuel loading, approach to criticality and power generation after obtaining stage-wise clearance from the AERB," Narayanasamy said. The Nuclear Power Corporation of India Limited (NPCIL) is building two 1,000 MW power plants at a cost of nearly Rs 16,000 crore with Russian collaboration.

The NPCIL is expected to load 163 fuel assemblies into the reactor sometime

later this month after getting a nod from the AERB. Each assembly is 4.57 metres long and comprises fuel bundles. The two 1,000 MW Russian reactors will use enriched uranium as fuel and light water as coolant and moderator.

http://articles.economictimes.indiatimes.com/2012-08-08/news/33100893_1_reactor-pressure-vessel-pmo-v-narayanasamy-fuel-bundles

India's first nuclear submarine set for sea trials AFP, August 8, 2012

NEW DELHI: India on Wednesday said its first home-built nuclear submarine was set for sea trials, as it detailed billion-dollar projects to arm its navy with warships, aircraft and modern weaponry. The indigenous 6,000-ton INS Arihant (Destroyer of Enemies) was unveiled in 2009 as part of a project to construct five such vessels which would be armed with nuclear-tipped missiles and torpedoes.

"Arihant is steadily progressing towards operationalisation, and we hope to commence sea trials in the coming months," Indian Navy Chief Admiral Nirmal Verma told reporters. "Our maritime and nuclear doctrine will then be aligned to ensure that our nuclear insurance comes from the sea," Verma said.

Arihant is powered by an 85-megawatt nuclear reactor and can reach 44 kilometres an hour (24 knots), according to defence officials. It will carry a 95-member crew. The Indian Navy inducted a Russian-leased nuclear submarine into service in April 2012, joining China, France, the United States, Britain and Russia in the elite club of countries with nuclear-powered vessels.

Verma said 43 warships were currently under construction at local shipyards while the first of six Franco-Spanish Scorpene submarines under contract would join the Indian navy in 2015 and the sixth by 2018.

<http://tribune.com.pk/story/419308/indias-first-nuclear-submarine-set-for-sea-trials/>

Installation of American Nuclear Reactor in India

August 09, 2012, *Press Information Bureau of India*

A Memorandum of Understanding (MoU) and a confidentiality agreement between Westinghouse Electric Company (WEC), USA and Nuclear Power Corporation of India Limited (NPCIL) was initially signed in 2009. An amendment to extend the term of the earlier signed MoU till May, 2014 was signed on June 12, 2012. The amendment also includes a clause to sign an Early Works Agreement.

The review of safety provisions in design of AP – 1000 systems to withstand extreme natural events like earthquakes and Tsunamis, post Fukushima incident, has been carried out in the vendor country.

Westinghouse Electric Company has made a presentation on the same to the Indian side. The Design Certification of the AP – 1000 reactor was issued by United States Nuclear Regulatory Commission (USNRC) in December 2011, after the Fukushima accident.

The above information was given by the Minister of State in the Ministry Personnel, PG & Pensions and in the Prime Minister's Office (Shri V. Narayanasamy) in a written reply in the Rajya Sabha today.

<http://pib.nic.in/newsite/erelease.aspx?relid=85899>

Atomic Energy Regulatory Board approves loading of fuel at Kudankulam plant *Times*

News Network, August 10, 2012

CHENNAI: The Atomic Energy Regulatory Board (AERB) has given its approval for loading fuel at the 1000-MW Unit 1 of the Kudankulam Nuclear Power Plant. The approval came after a meeting of the regulatory board on Thursday evening. This is the last step before the unit starts production of electricity.

“The board in principle has given its clearance for loading fuel after reviewing various stages of progress of the Unit 1. An official communication is being sent out to the Nuclear Power Corporation Limited (NPCIL) and the plant authorities in this regard,” said S S Bajaj, chairman of the AERB. The meeting of the board and NPCIL officials started on Monday.

Fuel loading is likely to begin in another 10 days, said an official of the NPCIL. “The fuel assemblies are ready in a core area of the plant, which is open to inspections by the International Atomic Energy Agency according to the Indo-US Nuclear Agreement. Fuel loading will happen in the presence of IAEA officials,” the official said. Russia which has provided the two VVER reactors has provided the fuel till the lifetime of the reactors.

The first step in the process of loading fuel will be to replace the parts of the reactor vessel which was opened for inspections soon after the plant began its operations in March, after a break due to protests by anti-nuclear protesters in Kudankulam

and nearby villages including Idinthakarai.

http://articles.timesofindia.indiatimes.com/2012-08-10/chennai/33136650_1_fuel-bundles-reactor-vessel-second-reactor

Russian reactors in Kudankulam to fall under liability law

Rajeev Deshpande,
Times of India, August 13, 2012

NEW DELHI: In what will set the bar for India's nuclear contracts, Russia's plea that two reactors planned at Kudankulam in Tamil Nadu — apart from units 1 and 2 — be exempted from provisions of the tough nuclear liability law may not be accepted.

Reactors 1 and 2 that are to go on stream soon are not covered by the 2010 liability law that makes suppliers of a nuclear plant, not just the operator, open to legal action under the "right to recourse" in the event of a nuclear mishap.

"It may not be possible for provisions of the Civil Liability for Nuclear Damage Act to be kept in abeyance for units 3 and 4 at Kudankulam," an official source said.

Applying the liability law will settle the issue of right to recourse. The griping may not end, but the government will assert that foreign suppliers need to live with India's national laws despite concern over legal action and higher insurance costs.

http://articles.timesofindia.indiatimes.com/2012-08-13/india/33182102_1_liability-law-nuclear-damage-act-russian-reactors

Russia set to turn screws on India Sachin Parashar, *Times News Network*, August 14, 2012

NEW DELHI: If the government decides to bring Kudankulam's third and fourth

units under the purview of the nuclear liability law, which makes suppliers liable for compensation in case of accidents, Russia will mount double pressure on India.

Russia will not only increase the cost of the reactors, but also seek a change in the conditions for the credit line being provided by it to build them. Russian officials have warned that any "negative influence" on the 1988 agreement for the first and second unit and the 2008 civil nuclear cooperation agreement could jeopardize collaboration for nuclear power plants between the two countries.

"We are still hopeful that a way out will be found for implementation of the roadmap of civil nuclear cooperation between the two countries as per these agreements as that is what PM Manmohan Singh had assured Russian deputy PM Dmitry Rogozin when he called on him recently," a Russian government source said.

"There is some concern though about what is happening and if indeed nuclear liability law comes into play, not just the cost of the reactors will shoot up significantly but the terms and conditions for the credit line being extended for the reactors too will have to be changed," he added.

http://articles.timesofindia.indiatimes.com/2012-08-14/india/33200339_1_liability-law-kudankulam-reactors

G. Pakistan

Pakistani Air Force Base with Nuclear Ties Is Attacked

By DECLAN WALSH,
New York Times, August 15, 2012

KARACHI, Pakistan — Suspected Islamist militants attacked a major

Pakistani Air Force base where some of the country's nuclear weapons are thought to be stored in the early hours of Thursday, setting off an exchange of fire that lasted several hours.

Security forces battled attackers until dawn at the Minhas air force base, west of the capital, Islamabad, according to reports on Pakistani television. At least one militant was killed and several others were wounded. The base, in the Attock district of Punjab, is believed to be one of the locations where part of Pakistan's nuclear stockpile, estimated to include at least 100 warheads, is stored.

The assault came amid mounting speculation that Pakistan's military was preparing to carry out an operation in the militant stronghold of North Waziristan, in the tribal belt — a longstanding demand of the United States. Early reports suggested that the attackers, some wearing suicide jackets, were targeting JF-17 fighter jets at the base that could be used in such an operation.

http://www.nytimes.com/2012/08/16/world/asia/pakistani-air-force-base-with-nuclear-ties-is-attacked.html?_r=1&nl=todaysheadlines&emc=edit_th_20120816

Civil nuclear technology from US sought Salim Ahmed, *Pakistan Observer*, August 16, 2012

Lahore—The Lahore Chamber of Commerce and Industry Thursday urged the government to press upon the United States to provide civil nuclear technology to help Pakistan overcome ongoing electricity crisis.

The LCCI President Irfan Qaiser Sheikh said that the United States should provide civil nuclear technology to Pakistan as it has given to the neighboring India. He said that the US decision to provide civil nuclear

technology to Pakistan would not only strengthen relations between the two countries but would also cement their economic ties as non-discriminatory access to civil nuclear technology will help meet the country's exponentially growing energy needs.

“Pakistan has more than 35 years of experience in running nuclear power plants. With trained professional manpower and a strong nuclear safety and security culture, Pakistan fully qualifies for participation in civil nuclear cooperation at the international level,” the LCCI President said. “We ask government to urge all relevant forums to give Pakistan access to nuclear technology for peaceful uses, in a non-discriminatory manner, to meet its growing demand for energy.”

<http://pakobserver.net/detailnews.asp?id=168858>

H. UN and African Union

UN atom agency sees “significant” nuclear safety progress By Fredrik Dahl, *Reuters*, August 15, 2012

Important progress has been made towards strengthening global nuclear safety after Japan's Fukushima accident last year, according to the United Nations atomic watchdog, but a leading environmental group disputed this.

The International Atomic Energy Agency made the assessment in a report prepared for next month's annual meeting of IAEA member states, which endorsed a safety action plan by consensus last September despite criticism that it did not go far enough.

“Since the adoption of the IAEA Action Plan on Nuclear Safety, significant progress has been made in several key areas,” the Vienna-based U.N. agency said. These included “improvements in emergency preparedness and response capabilities,” it added in the nine-page document posted on its website.

But environmental campaign group Greenpeace, which opposes nuclear energy, said there had been “no real” progress.

“The IAEA’s action plan does not address any of the real lessons of Fukushima,” Aslihan Tumer of Greenpeace International’s nuclear campaign said in an e-mailed comment.

<http://in.reuters.com/article/2012/08/15/nuclear-safety-iaea-idINDEE87E06R20120815>

African nuclear commission takes shape

World Nuclear News, August 13, 2012

A new commission to coordinate and promote the development of nuclear energy in Africa is set to become fully operational after key founding documents were finalized and adopted. South Africa has agreed to host the commission in Pretoria.

The African Union (AU) established the African Commission on Nuclear Energy (Afcone) in November 2010, following the entry into force of the African Nuclear-Weapon-Free Zone Treaty in July 2009, which required the parties to establish a commission for the purpose of ensuring states’ compliance with their treaty obligations and promoting peaceful nuclear cooperation, both regionally and internationally. Twelve commissioners were subsequently elected, representing Algeria, Burkina Faso, Cameroon, Ethiopia, Kenya, Libya,

Mali, Mauritius, Senegal, South Africa, Togo and Tunisia. It was agreed that the new commission’s executive secretariat would be located in South Africa.

At a meeting in Addis Ababa on 26 July, the commissioners adopted the rules of procedure, structure, program of work and budget of Afcone. The commission will focus on the following four areas: monitoring of compliance with non-proliferation obligations; nuclear and radiation safety and security; nuclear sciences and applications; and, partnerships and technical cooperation, including outreach and promotion of peaceful uses of nuclear energy.

http://www.world-nuclear-news.org/NP-African_nuclear_commission_takes_shape-1308124.html

Namibia to Explore Nuclear Energy Option BY

MATHIAS HAUFIKU, *All Africa*, August 13, 2012

Rundu — The Minister of Mines and Energy (MME), Isak Katali, says the inadequate supply of power in Southern Africa leaves the door open for the possibility of a nuclear power station in Namibia. Katali made the announcement during the Electricity Supply Industry Stakeholders Forum in Rundu last week Thursday.

“I am not saying we will have a nuclear plant, all I am saying is that government through our ministry and the electricity supply industry are looking at all power sources, among them, wind energy, hydro and coal-fired stations, a solar thermal collector and the possibility of a nuclear power station in the future,” he said.

Although there has been a public outcry and opposition to the idea of

having a nuclear plant in the country, mainly due to safety concerns, Katali says the Ministry of Mines and Energy has finalized a nuclear cycle policy which is expected to pave the way to see how nuclear power can be harnessed to satisfy the country's growing energy needs.

<http://allafrica.com/stories/201208130503.html>

I. Opinion

China's Nuclear 'Leakage'

Larry M. Wortzel, *The Diplomat*,
August 7, 2012

"Top Secret" Chinese military documents seem to reaffirm widely held views on Beijing's nuclear forces - or does it? As a former military attaché in China and Army intelligence officer, I only very rarely managed to get my hands on "Top Secret" Chinese documents. Today, around the Washington, DC area alone, there are by my count some eight original copies of *The Science of Second Artillery Campaigns* in the hands of China specialists at universities, think tanks, and policy institutes.

The document, labeled "Top Secret," is somewhat comforting to the community involved in thinking about nuclear weapons doctrine, escalation control, and crisis management. Embodied in Chinese policy, as set out in this PLA publication, is a confirmation that China will maintain a minimal nuclear deterrent of a few weapons able to effect a response to a first strike by another power, an affirmation that China will never be the first to use nuclear weapons, and an explanation of the alert levels and rough response times for the PLA Second Artillery force in the event of nuclear war.

The number of original documents in the hands of U.S. specialists on China

stimulated me to think about why so many highly classified documents managed to leak out of one of its most secretive arms of the PLA. As a former intelligence collector, it is clear that losing one document like this is a major security breach, but losing a trove is a rare thing. And outside the Washington-based China-watching community, there are more copies. Some are on the US west coast, others are in Taiwan.

One explanation for this seeming breach is that although the PLA is not willing to sit down in government-to-government exchanges on nuclear doctrine and escalation control, PLA leaders decided to provide some sort of reassurance to the Western policy community. The implications of the underlying policy in *The Science of Second Artillery Campaigns* is that China is a "responsible nuclear power" that will not engage in an arms race. Stated nuclear doctrine is, indeed, embodied in what should be tightly controlled PLA doctrinal writings. And, to reinforce this interpretation, the discussion of nuclear force levels, "no first use" policy, and readiness levels contained in the *Second Artillery Force* publication is consistent with the contents of the unclassified PLA publication, *Seco*. If that is the case, why bother classifying the *Second Artillery's* publication so highly? Taken together, these two publications affirm everything that the arms control community would advocate about building down U.S. nuclear forces toward "nuclear zero."

There is at least one alternative explanation, however. Inside the nuclear policy community in China we know there is some debate about the utility of the "no first use" policy. A minority of younger PLA officers and scholars argue that China needs to increase the size of its nuclear forces

and leave open the question of how China might respond to conventional strikes on the Chinese mainland. Also, there is the suggestion by analysts like Phillip Karber that the United States may have seriously underestimated the size of China's nuclear force, which is now mobile and may be hidden in a complex of tunnels. A few Russian scholars, and Karber's work, suggest that China may have considerably more than the 400 or so U.S. documents credit the PLA with having. One Russian specialist, Alexei Arbatov, estimates that China may have between 1,000 and 3,500 reserve warheads stockpiled based on his analysis of Beijing's fissile material production capabilities. Victor Yesin, a retired Russian general, estimates that China has between 1,600 and 1,800 warheads. Certainly the Chinese nuclear infrastructure is capable of producing the fissile material for more than 400 warheads.

An alternative explanation to the existence of so many highly classified documents leaking out to the West in so short a time is that the PLA is involved in a major perception management and disinformation campaign. Could what many of us have accepted, this writer included, as established PLA doctrine because of these books be part of a more nuanced effort designed to reinforce the effort in the United States to reduce the size of our nuclear forces and to rethink the scope and deployment of U.S. efforts on ballistic missile defenses?

It would be one thing if one or two highly classified documents out of China somehow leaked out into the policy community and then copies made their way into the hands of interested scholars and policy analysts. But that is not the case. Instead, a large number of highly classified original documents have found their way out of China. It is as though a

case or two of documents from a Chinese publishing house, which heretofore has managed to control its classified inventory, was shipped to bookstores in Taiwan and Hong Kong. My experience as an intelligence officer is that such a massive breach is a very rare thing. Intelligence collectors can labor for years to get their hands on one copy of a document at this level of classification.

If U.S. policy-makers accept the force levels and doctrines in *The Science of Second Artillery Campaigns* as established policy in China, then U.S. (as well as Russian and Indian) force levels can be safely reduced. Ballistic missile defense programs can be scaled in a way to counter a limited nuclear threat, not only from China, but other nascent nuclear powers like North Korea. But if the Karber thesis is closer to the truth, and China has a significantly larger nuclear force that we believe to be true, the U.S., and its allies that depend on extended deterrence, could be in for a shocking strategic surprise.

The manifestation of so many copies of this document in so many hands makes it all the more urgent that the U.S. continue to pursue a direct, government-to-government strategic dialogue with China. The Second Artillery Force has avoided such exchanges to date; even if there have been limited track-two dialogues. [Editor's note: The Pacific Forum manages two such dialogues annually, which help set the stage for, and would complement, but are no substitute for official exchanges.] The existence of so many PLA publications outside China on this heretofore carefully protected area of policy makes it unwise to base future U.S. force and defensive postures on what may be a managed perception management campaign.

Larry M. Wortzel, Ph.D. is a retired US Army colonel who served two tours of duty as a military attaché in China. He was director of the Strategic Studies Institute at the Army War College and is the author of *China's Nuclear Forces: Operations, Training, Doctrine, Command, Control and Campaign Planning* (Strategic Studies Institute, 2007). This article was originally published by Pacific Forum CSIS PacNet here, and represents the views of the respective author.

<http://thediplomat.com/china-power/chinas-nuclear-leakage/>

Obama's Nuclear Arms Control Approach Won't Make Us Safer G. PHILIP

HUGHES, *US News Weekly*, August 3, 2012

Imagine that you're a graduate school international relations professor and one of your grad students has turned in his seminar paper. It outlines a new and imaginative, supposedly fool-proof plan for ridding the world of the specter of nuclear terrorism.

He proposes a new regime to keep track of and control all nuclear materials, the essential ingredients of a nuclear device. To work, his regime must be 'universal, comprehensive, and enforceable.' And he explains that his project has real timeliness because it's an essential stepping stone to achieving President Barack Obama's declared goal of a world free of nuclear weapons—'Global Zero' in its movement moniker. Because unless all of the world's fissile materials are accounted for, even in a world in which the nuclear powers had scrapped their nuclear weapons, it would remain possible for terrorists or rogue states to acquire some nuclear material. Combining that with widely diffused nuclear weapons know-how, they could produce some kind of nuclear explosive

device. Of course no one wants a world of 'Global Zero' to produce a real-life version of *The Mouse That Roared*. Unlike the movie, that would not be funny!

As you read your enterprising grad student's paper—earnest in its determination to avoid such a tragic side effect of a noble cause—you notice a couple of things. First, it requires the United States to take on new and additional obligations: e.g., to take the lead, naturally, to promote the new regime; to open its military weapons and nuclear weapons facilities to international accountability; to adopt the same accountability regime for its civilian nuclear industry applicable to non-nuclear weapons states adhering to the Non-Proliferation Treaty; and so on.

Then you notice a couple of other things. Your student's proposal postulates that the five permanent members of the U.N. Security Council will give up their veto—via a sort of time-limited enabling resolution—over actions to enforce the regime mounted by 'coalitions of the willing'. You know from Bosnia, Kosovo, Iraq, Iran, Syria—well, pick your past or current international crisis—how likely to work that is. Then, in explaining his proposal as the only effective way to avert new A.Q. Khan-type nuclear smuggling networks, your grad student lets drop his conclusion that it really wouldn't matter too much if North Korea stayed outside this 'universal, comprehensive' regime. An outlier like that could be 'managed'.

What would you think? If you were kindly, you'd probably just dismiss the paper as well-intentioned nonsense. If you were stern, you'd probably give him an 'F' for predicating his proposal on such obvious nonstarters as Security Council members relinquishing their veto over the use

of force in the name of the United Nations. Or the outlandish idea of a non-proliferation regime that excludes the world's most dangerous nuclear proliferator.

But what if, instead, this proposal were put forward by a couple of highly experienced and credentialed national security officials of previous administrations, Republican and Democrat—men who'd formerly served in senior policy positions at the Departments of State or Defense, had been chief arms control negotiators, or ambassadors, or White House National Security Council officials?

Well, in that case, obviously, this idea would merit the most serious consideration. It would be launched in an internationally prestigious journal. Its publication would be timed for possible inclusion on the president's agenda at the Nuclear Security Summit, held last March in Seoul. It would be the focus of discussions at prestigious Washington think tanks. Which is precisely what has happened with "The Next Step in Arms Control: A Nuclear Control Regime," published at the beginning of 2012 in the International Institute of Strategic Studies' journal, *Survival*.

My point is not merely that ideas sell partly on who is behind them. That's inevitable in human affairs—as anyone knows who's been in a meeting at which the boss has a brainstorm or who's attended a rally in which some iconic celebrity urges some particularly inane but virtuous-sounding idea.

Nor do I mean to suggest that, merely because something super-ambitious hasn't been tried—or hasn't worked—before, that it shouldn't be attempted. Most of the key accomplishments of President Ronald Reagan's arms control policies would have been impossible with that kind of thinking: the 'zero option' that eliminated an

entire class of nuclear weapons (intermediate-range nuclear forces or INF); the presumed-to-be-impossible on-site inspections eventually enshrined in the START I agreement; the 'anytime, anywhere' challenge inspection provisions, once derided as a 'treaty-killer', adopted in the Chemical Weapons Convention.

Rather, in the service of a seemingly virtuous idea—so apparently appropriate to a post-Cold War world—this new proposal helps lay bare how many contortions will be required—how many improbable assumptions and potentially fatal compromises will have to be made—in the 'Global Zero' effort, embraced by Obama, to "stuff the nuclear toothpaste back in the tube." A 'new nuclear control regime' will be required to make a 'Global Zero' world plausible. Because a Mouse That Roared possibility wouldn't just discredit the whole enterprise; it would endanger the civilized world.

[Read the U.S. News Debate: Should the United States Consider Military Action to Hinder Iran's Nuclear Program?]

So, to be clear, what these folks are saying is that, because North Korea and Iran have violated their obligations under the Non-Proliferation Treaty, the United States must assume new, additional obligations and constraints on its nuclear activities as a first step to getting the rest of the world on board. Huh?!

Who would ever have thought that nuclear arms control today would turn out to work a lot like that old joke about the drunk searching on his knees in the gutter under the street lamp?! When a passing cop learns that he's looking for his dropped car keys and asks where he lost them, the drunk replies, "Over

there by my car.” “So why are you looking here?” asks the cop, and the drunk tells him, “Because the light’s better!”

Arms control aficionados can certainly wield a lot more influence—through advocacy, ‘scholarship,’ lobbying, congressional action, etc.—on U.S. nuclear policy than they can on North Korea or Iran—but that scarcely means that the real menace will be reduced or that any of us will be any safer.

http://www.usnews.com/opinion/blogs/g-philip-hughes/2012/08/03/obamas-nuclear-arms-control-approach-wont-make-us-safer_print.html

Selling uranium to India could make world safer

Crispin Rovere, *Canberra Times*,
August 8, 2012

The question of uranium exports to India has cut fissures in Australian society almost as deep as the mines from which the mineral is extracted. Nevertheless, exporting uranium to India may actually help nuclear disarmament.

It is true that the Nuclear Non-Proliferation Treaty ranks among the most successful arms control agreements in history. Only three states refuse to sign (India, Israel, and Pakistan) with one withdrawn (North Korea). Yet the NPT is not an end in itself. It is a means to a much higher objective; the emancipation of humanity from the dangers of nuclear war.

The 2005 US-India nuclear deal seriously undermined the bargain inherent in the NPT. Since then, nine other countries have negotiated or are in the process of negotiating nuclear cooperation agreements with India, including four of the five permanent members of the United Nations Security Council. This means that when it comes to exporting uranium to

India, Australia is no longer a partner in a global effort, but is instead sitting isolated out in the cold. The belief that Australia should refuse uranium exports to India, however nobly intended, promises to be an unmitigated failure.

A no-exports policy is based on three myths:

Myth 1 - India’s need for Australian uranium can influence India to sign the NPT.

Both parts of the above statement are untrue. India may like to purchase uranium from Australia, but this will not be an imperative for India for the foreseeable future. At present, nuclear power accounts for only 2.5 per cent of India’s total energy production. Nor will India ever sign the NPT. Article IX.3 of the NPT makes clear that only states that exploded a nuclear device before 1967 are considered Nuclear Weapons States for the purposes of the treaty. India would have to completely disarm itself of its nuclear arsenal before acceding to the NPT. Faced with two threatening nuclear powers on its borders (China and Pakistan), asking India to disarm unilaterally is not realistic.

Myth 2 - Exporting Australian uranium to India, even under safeguards, frees up other uranium to expand India’s nuclear arsenal. As former Director-General of the Australian Safeguards and Non-Proliferation Office, John Carlson, succinctly pointed out; an average nuclear power reactor consumes about 200 tonnes of natural uranium per annum; whereas nuclear bombs need only about five tonnes before enrichment. Therefore a state will always be able to procure the uranium required for a weapons program; the challenge of developing nuclear weapons is largely technical.

Moreover, uranium is an interchangeable currency when it comes to electricity generation. In this respect, Australia exporting coal to India has exactly the same impact of “freeing up uranium reserves” as exporting uranium.

Myth 3 - Australia not exporting uranium to India is a matter of principle, regardless of what other countries may do.

Not entirely. We export uranium to China, which is a member of the NPT and permitted nuclear weapons under the treaty, even though China was instrumental in the development of Pakistan’s nuclear weapons program. It is small wonder then that New Delhi has been so scornful of Australia’s position; we export uranium to China which has failed to meet its obligations, while refusing India which maintains an excellent non-proliferation record, despite having no formal obligation to do so. The Australian government should demand, as part of a uranium export deal, that India ratifies the Comprehensive Test Ban Treaty after the US Senate.

While India won’t sign the NPT, a commitment tying India’s ratification of the CTBT to the US Senate would be both politically digestible for India domestically, as well as being an important step toward nuclear weapons abolition. This is because decisions regarding the expansion of nuclear forces are largely made in response to actions taken by other nuclear states. China expands its arsenal in response to the nuclear superiority of the United States; India responds to China, which in turn influences Pakistan. These interconnected relationships make a nuclear arms race in this region both likely and frightening. If the United States ratifies the CTBT, China has said that it will follow suit. If China

and India both ratify the CTBT, it will be politically difficult for Pakistan to resist. Without the right to test, nuclear modernisation becomes more difficult and an unrestrained nuclear arms race made less likely.

Australia’s responsibility to promote non-proliferation transcends any individual policy, including the NPT, and must be adapted to evolving circumstances. If New Delhi commits to tying ratification of the CTBT to the US Senate, the government can truthfully tell the Australian people that our export of uranium to India has advanced global disarmament objectives.

<http://www.canberratimes.com.au/opinion/selling-uranium-to-india-could-make-world-safer-20120807-23say.html#ixzz22rnUsrGj>

New tech raises

proliferation risk By

MICHAEL RICHARDSON, *The Japan Times*, August 08, 2012

SINGAPORE — The United States is on the verge of approving a license later this month for the world’s first plant to enrich uranium on a commercial scale for civilian nuclear power reactors using laser technology developed by an Australian company.

The Australian firm, Silex Systems Ltd., says that its secret laser system is cheaper than existing methods of turning natural uranium into fuel for reactors that generate electricity. The plant could be in operation in the U.S. by 2016. It would be run by a partnership of three leading nuclear suppliers, America’s GE Energy, Japan’s Hitachi Ltd. and Canada’s Cameco, the largest uranium producer.

This could give the partners a significant share of global enrichment

business and enable them to offer buyers a complete commercial package that included construction of reactors and supplying fuel. The enrichment market is expected to be worth \$20 billion by 2030, as more countries in Asia, the Middle East and elsewhere start or expand nuclear power to generate big amounts of electricity without the pollution and global warming emissions caused by burning coal.

But enrichment is controversial because it can produce nuclear bomb-grade uranium as well as fuel for civilian reactors. Some critics of the impending move to a more advanced method of concentrating fissile uranium elements using lasers say it comes at a critical time and will encourage the spread of nuclear weapons, even though the U.S. and Australian governments have put strict safeguards in place to prevent unauthorized use of the laser technology.

At present, uranium is mostly enriched with arrays of thousands of spinning centrifuges, a mechanical and relatively simple technique that even rogue states can copy. Both Iran and North Korea have done so. Concern is growing that Iran and North Korea will soon enrich nuclear bomb-grade uranium using this older centrifuge technology, prompting other countries in the Middle East and Asia that feel threatened to consider going nuclear — and to take a close look at laser enrichment as they do so.

North Korea has already built a small nuclear arsenal using plutonium reprocessed from used reactor fuel. Uranium enrichment is a second, and some say faster, pathway to making nuclear weapons. SILEX is an acronym for Separation of Isotopes by Laser Excitation. The company, a spin-off from the Australian government's nuclear

science and research establishment at Lucas Heights, south of Sydney, is listed on the Australian Stock Exchange.

The company's website says that its laser-based SILEX process provides much higher enrichment efficiency compared older centrifuge and gas diffusion methods, offering significantly lower costs. Scott Kemp, an assistant professor of nuclear science and engineering at the Massachusetts Institute of Technology, says that the worry with SILEX laser technology "is that it is particularly suited for nuclear proliferation, even better than centrifuges. SILEX can also enrich fuel-grade uranium to weapons-grade in fewer steps than a ... centrifuge."

Kemp was until 2011 science advisor in the Office of the Special Advisor for Nonproliferation and Arms Control at the U.S. State Department. Writing in the latest issue of the Bulletin of the Atomic Scientists, he says that before the plant is licensed the U.S. government or Congress should commission an independent inquiry into whether its benefits outweigh the added proliferation risk. Other U.S. nuclear scientists and arms control specialists have previously called for similar action.

At least 27 countries, including North Korea and Iran, are known to have shown interest in laser enrichment. The most recent is India, which like Pakistan and Israel, has developed nuclear weapons in defiance of the treaty to prevent the spread of these weapons. In April, a South African firm said that it had sold one of its advanced lasers to an Indian government atomic research laboratory. Kemp says that China and South Korea have recently begun courting U.S. laser-enrichment experts.

A U.S. State Department assessment in 1999 of the SILEX technology and the plans to start commercial processing conceded that a laser enrichment facility “might be easier to build without detection and could be a more efficient producer of high enriched uranium for a nuclear weapons program.”

The 16-page assessment specifically raised the question of whether, if SILEX led to a breakthrough in low-cost enrichment, others might pursue the process with an accompanying nuclear proliferation risk? “It seems likely,” the State Department said, “that success with SILEX would renew interest in laser enrichment by nations with benign intent as well as by proliferants with an interest in finding an easier route to acquiring fissile material for nuclear weapons.”

However, the department concluded that any potential risk was offset by the fact that laser enrichment was difficult to master and that even advanced nuclear nations had experienced considerable difficulty in solving the complex technical challenges associated with both the technology and the materials handling problems involved.

The U.S. is the world’s biggest nuclear power producer, generating nearly 20 percent of its electricity from reactors. But the U.S. has to import about 80 percent of the low-enriched fuel used in the reactors. It clearly hopes that laser enrichment would reduce this dependence and lower fuel costs. That would be good for the U.S. — provided it can prevent the laser technology from spreading and fueling a nuclear arms race.

Michael Richardson is a visiting senior research fellow at the Institute of South East Asian Studies in Singapore.

Civil disobedience BY KENNETTE BENEDICT, *Bulletin of Atomic Scientists*, August 09, 2012

It was the 82-year-old nun who caught my attention. In the early morning hours of July 28, Sister Megan Rice, Michael R. Walli, and Greg Boertje-Obed of the peace group Plowshares cut through fences at the Y-12 nuclear weapons plant in Oak Ridge, Tennessee. The group spray-painted protest messages, hung banners, and splashed blood on the national facility, which manufactures US nuclear weapons and stockpiles highly enriched uranium. This act of civil disobedience is the latest in a series of such protests since 1980 when the group was founded to raise public awareness of the continuing dangers of nuclear weapons.

Small protests at nuclear and military facilities rarely get much media attention. But this one is raising more concerns than others have in the past, because at Oak Ridge the protesters were able to break through security at one of the most significant and oldest bomb-making plants in the country. It was at this plant where highly enriched uranium was manufactured for use in the Hiroshima bomb dropped on August 6, 1945, at the end of World War II. The “Oak Ridge Three,” as the activists will come to be known, marked the Hiroshima anniversary with vandalism — and an extraordinary breach of security at the Y-12 plant. In their statement, the trio also protested the planned construction of a new \$6.5 billion uranium-processing facility next to Y-12.

The National Nuclear Security Administration has acknowledged the seriousness of the action, which involved the protesters walking into

a high-security zone of the plant, calling the security breach “unprecedented.” The government response, so far, has been to commend the independent security contractor, WSI, for its subsequent actions, including a weeklong “security stand-down,” a halt to weapons production, and mandatory refresher training for all security staff.

Nonproliferation policy experts, on the other hand, will draw attention to the relative ease with which these unarmed, unsophisticated protesters could cut through a fence and walk into the heart of the facility. They will point to the event as further evidence that nuclear security — that is, the securing of highly enriched uranium and plutonium — should be a top priority because it is the only way to prevent terrorist groups from acquiring nuclear bomb-making material. They will question the use of private contractors to provide security at facilities that manufacture and store the government’s most dangerous military material. In fact, the Oak Ridge intrusion took place just a few days after WSI announced plans to eliminate about 50 security jobs, including 34 security police officers at Y-12. I presume that others will also question, as I do, the need for a nuclear bomb-making plant at all — especially at a time when the United States, Russia, and other countries are talking about vastly reducing their nuclear arsenals and when former government leaders, and even the US president, are calling for a “world free of nuclear weapons.”

I was struck by the image of three white-haired activists from a movement that began in the early 1980s at the height of the Cold War. Some might find it odd that an 82-year-old nun and her companions — aged 63 and 57 — are protesting nuclear weapons. In a way, though, the weapons themselves

are just as odd these days. They are aging, too. But, unlike the protesters, nuclear weapons are no longer relevant, and they need to be quietly laid to rest. Instead of creating new materials to renovate old warheads, it is time to let them go gently into that good night. In other words, it is time for nuclear weapons to retire and, in time, to be buried.

And who better to bury them than those who grew up with them? Aging baby-boomers are also Cold War babies. We remember civil defense drills in school, the tense days of the Cuban Missile Crisis, nuclear bomb shelters, and the fear of a nuclear war from which no one could hide. We still have memories that stir horror and a sense of helplessness.

Before we too go gently into that good night, perhaps Cold War boomers should make sure nuclear weapons go with us to the grave. For those of us in our 60s and 70s, still active and with time on our hands, the abolition of nuclear weapons is a worthy goal. We claim to have ended the Vietnam War with our protests and our marches. Perhaps we have one last act of social justice in us. Perhaps we could bring about the end of nuclear weapons and remove the prospect of nuclear war for our children and grandchildren.

<http://www.thebulletin.org/web-edition/columnists/kennette-benedict/civil-disobedience>

A permanent solution for spent nuclear fuel is

needed now Editorial, *New Hampshire Sentinel Source*, August 12, 2012

The U.S. Nuclear Regulatory Commission has stopped issuing permits and license extensions for nuclear power plants while it reviews

its policies for storing nuclear waste. The move comes after a federal court said the agency hasn't done enough to explain the environmental consequences if the procedures in place fail. The Seabrook Station in New Hampshire is one of the 14 reactors awaiting license renewal.

The move, however, doesn't affect Vermont Yankee — the Vernon, Vt. nuclear reactor owned by Mississippi-based Entergy Corp. — which was granted a 30-year license extension by the federal regulatory agency last year. But what becomes of spent fuel is a topic that pertains to all nuclear facilities worldwide, including those long-since closed, as was highlighted in 2011 with the earthquake-triggered meltdown of a Japanese facility.

The high-level radioactive waste, which at the Vermont plant is stored in stacked casks on the western shore of the Connecticut River, has to be kept contained from the environment for tens of thousands of years. Yet, there's no permanent storage plan in place.

The Nuclear Waste Policy Act passed in 1982 called for the construction of a national spent fuel storage area and gave the U.S. Department of Energy a 1998 deadline to start taking spent fuel from nuclear sites to this permanent storage area.

That deadline came and went and, in the meantime, the federal government spent a lot of money planning a repository at Yucca Mountain northwest of Las Vegas that was blocked by President Barack Obama. Instead, the Blue Ribbon Commission on America's Nuclear Future was formed to study the topic of what to do with the radioactive waste. It issued a final report in January that recommended finding a place to put a permanent storage site that is welcomed by local residents, rather than forced upon them; revamping the

Nuclear Waste Fund to be sure that fees paid into it are used for waste disposal; and creating a new organization that is not tied to the Department of Energy to oversee nuclear waste. The commission presented its recommendations to the Senate Environment and Public Works Subcommittee on Clean Air and Nuclear Safety in June.

So here we sit, 14 years past the deadline when a permanent storage site was expected and seemingly no closer to a suitable solution. Having the NRC thoroughly review its policies for temporarily dealing with the waste is good. But coming up with a permanent solution to this issue is long overdue.

http://www.sentinelsource.com/opinion/editorial/a-permanent-solution-for-spent-nuclear-fuel-is-needed-now/article_2d3527e4-5a88-5c5a-ac15-4a9825465bd6.html

Germans Confront the Costs of a Nuclear-Free Future

ERIC WESTERVELT. *NPR*, August 14, 2012

After Japan's Fukushima disaster last year, Germany announced a groundbreaking energy plan: It would phase out all of its domestic nuclear power in a decade and make a transition to safer, carbon neutral energy. The goal is to have solar, wind and other renewables account for nearly 40 percent of the energy for Europe's largest economy in a decade, and 80 percent by 2050.

But already the revolutionary plan and its ambitious timeline are in doubt. There are deep concerns about rising energy costs, and some citizens are mobilizing against fast-track plans for an expanded power grid. Horst Leithoff, a 57-year-old dairy farmer in the northern German village of

Ellhoeft, was hoping for some July sun to harvest the hay in his fields. He got rainy, windy weather instead.

Wind turbines near Ellhoeft, in northern Germany, close to the Danish border. The challenge for Germany's new energy plan is how to transmit power generated in the north to the population centers in the south. But that's OK with Leithoff, too. His other job is helping to manage four community wind farms in the North Frisia region near the Danish border. The massive, 500-foot-tall wind turbines have blades that weigh 22 tons apiece. Every rotation is marked by a rhythmic sound, like some enormous metronome.

This slice of northwest Germany is one of the country's best on-shore places to harvest the wind. And this northern state is rapidly expanding its wind production. But the problem today is transporting that energy — generated in this rural area — south to Germany's population centers. "You have to invest in the grids," says Leithoff. "We need about 200 million euros to invest to collect the energy from the wind farms on the west coast to Hamburg. The capacity is not big enough. We need a better grid."

Expanding the north-south grid is essential if the country is to meet its target of phasing out German nuclear power and more than doubling its renewable energy in just 10 years. In May, the country's four private electricity grid operators — the big power companies — handed Chancellor Angela Merkel a plan to build roughly 2,800 miles of new power lines from northern to southern Germany. But that plan for new high-capacity overhead lines is running into the familiar backlash.

Quality Of Life Concerns

Malte Graf lives in the village of Preetz in the picturesque northern state of Schleswig-Holstein. A field of waist-high wheat grows next to his house. A forest protected by the EU frames the field on two sides. By law, the new power lines can't go into the woodlands. They'd have to come through his field. "Between these two forests are just hundred of meters for the fields," Graf says. "This electricity line has to cross this field, then they have to go directly over our houses. And that's a really big problem."

Graf lives with his wife and two kids, alongside his brother and his family. Graf runs a small business supplying horse farms. But he spends more and more of his time these days crusading against plans for an expanded power grid. He has posted signs, and printed pamphlets and bumper stickers. He holds monthly meetings, where attendance is growing.

Graf's neighbors are joining in his fight. Marco Franzen lives a few miles away. His home abuts rolling farmlands, fields where horses, cows and sheep graze. The Schwentine river flows nearby through a protected forest. Standing on a sloping field, Franzen whips out binoculars and points out an osprey flying low over the river.

"We built our house here 10 years ago. We've started a family, and the power lines are a threat to our very existence. We're worried about our kids' lives, their health," he says. "And we're financially invested in the area. We have a 30-year mortgage to pay off. If these power lines are built, and they rip up the natural environment and run through our houses, our quality of life will be ruined."

Franzen, a forestry conservation consultant, says he worries, too, about possible health risks including leukemia and lung problems. Numerous studies, however, have shown no significant health risks from power lines or discernible links to cancer.

The Price Of A Nuclear Phase-out

The rise of the “Not In My Backyard,” or NIMBY, movement was perhaps inevitable. But if the German power giant TenneT has its way, opponents will not thwart the German dream of building a better grid to meet the nuclear phaseout goals.

A TenneT spokeswoman stresses that the planned route of new lines is not yet finalized. She adds that the company is working with citizens throughout the affected areas to hear their concerns. But Graf, Franzen and many others in the north aren't convinced yet. Franzen says he's sounding a wake-up call to a public he says is just starting to realize the problems of more high-tension power lines stretching across the German landscape.

“Many city dwellers come here and think, ‘Oh, how lovely,’ and an hour later, they are back in the city, switch on their lights and think nothing more of it,” he says. “We're the ones that have to live with electricity overhead. We are the ones who will have to deal with the daily strains. It's all well and good to build more wind farms, but we have to live with the power lines.”

Back at the wind farm on the North Sea near the Danish border, former air force pilot Holger Arntzen says the future of renewable energy in Germany is bright — if people can adapt. Arntzen is now project manager of Wind Comm, a nonprofit that supports wind farm development. For him, the key to stopping the backlash against the

power lines is to do more to inform Germans that the nuclear phaseout comes with a price and changes in lifestyle.

“To show what is possible, and how I, as a citizen, can influence the load on the grid, like putting on my dishwasher only when the sun shines, because we have a lot of photovoltaics. Or waiting on my dishwasher if we have no wind,” he says. “People must accept that the post-nuclear phase has a direct impact on how I live, how they live.”

That may be a hard sell, even to the practical-minded Germans. The fact is, the post-Fukushima consensus in Germany has given way to growing concerns about rising energy costs. The debate is intensifying over just who will pay for the transition to renewable energy, how it will happen, how fast — and through whose backyards.

<http://www.npr.org/2012/08/14/158760520/germans-confront-the-costs-of-a-nuclear-free-future>

Polish missile defense plan puts Poland first

Micha³ Baranowski, *Warsaw*

Business Journal, August 13, 2012

President Komorowski's call for the creation of Polish missile defense is not about Polish-American relations. In an August 6, 2012 interview in the Polish weekly *Wprost*, President Bronis³aw Komorowski stated that Poland is prepared to create its own anti-aircraft and missile defense system as part of a NATO shield. While some saw the statement as a rejection of US President Barack Obama's proposed missile defense system, others viewed it as a sign of Poland's weakening military alliance with the United States. Both arguments are misleading.

The missile and air defense system proposed by the Polish president is qualitatively different than the American Missile Defense System (MD), scheduled for deployment by 2018. The proposed Polish system would target short and medium range missiles from the near abroad, while the American MD shield would be capable of shooting down long range ballistic missiles originating from rouge states such as Iran. The Polish MD system is to be part of the NATO MD shield and would be an expansion of Poland's contribution to the Alliance, rather than creating a competing system, as some suggest.

American “boots on the ground”

The history of the American MD shield in Poland is long, complicated, and full of emotions. After years of difficult negotiations between Poland and the US, and amid adamant objections from Russia, Poland accepted the Bush administration's MD program on August 20, 2008. Earlier that year, the Polish government vigorously debated whether to accept the proposal of an outgoing Bush administration, which promised to complete the MD base in Poland by 2011, or whether to wait for the next US president to be elected the following November.

Even before the US presidential elections, the Polish side made robust efforts to understand the Democratic position on the MD system, should Obama become President. The final factor that convinced the Polish government to go ahead with the Bush MD program was the August 2008 Russia-Georgia war, which proved that state-on-state violence in Europe is still possible. The timing of this decision demonstrated the rationale for American MD for Poland.

The value of the American shield for Poland is not only its capacity to shoot down ballistic missiles, but also the

presence of American “boots on the ground” that would serve as a powerful deterrent for any potential aggressor. The Polish government's decision in the fall of 2008 was a gamble. By accepting the American project, Poland immediately paid the political price of strong Russian opposition without yet having an American base installed and the US Presidential elections further contributed to this uncertainty.

After Barack Obama's victory in the 2008 election, his administration initiated a review of several Bush administration decisions, including the MD program. Consequently, on September 17, 2009, President Obama called Polish Prime Minister Tusk to inform him that plans to implement the MD system would be modified. The administration proposed a new, reformulated project that would entail smaller, mobile SM-3 interceptors to be stationed in Poland by 2018.

This sudden shift in the US policy was badly received in Poland. First, the change in the program came as an announcement without prior consultations. Second, the Obama MD system plans for the Polish based installation to be completed by 2018, much later than the Bush plan, which adds uncertainty to the entire project. And third, the call from Obama came on the anniversary of Russia's attack on Poland at the start of WWII, adding unfortunate and negative symbolism to the announcement. The abrupt shift in American policy has raised doubts of the US commitment to Poland.

Complimentary, not competing

President Komorowski's comments that the “mistake was that by accepting the American offer of a shield we failed to take into account the political risk associated with a

change of president. We paid a high political price.” – referred directly to the gamble Poland took in 2008 near the change in the US administration.

Unfortunately, his statement has been largely misinterpreted. Depicting Poland as ‘betrayed and abandoned’, as The Telegraph did, and characterizing the deployment of American MD in Poland as a mistake paints an inaccurate picture. The following day the head of the Polish National Security Bureau Stanisław Koziej reasserted that President Komorowski sees the American MD project as a “necessary and important part of a NATO wide missile defense system.”

He also stated that prioritizing anti-aircraft and missile defense is part of a new strategic direction agreed by the Minister of Defense and the top military commander. Last year, they reflected an understanding among the Polish military staff that to be effective in contemporary conflicts, the army needs a well functioning short and mid-range MD shield. After all, Russia already threatened to deploy its Iskanders missiles in the Kaliningrad oblast later this year.

Mr Komorowski’s call for the creation of Polish missile defense is not about Polish-American relations, but about the future of Poland’s security. Poland needs stronger anti-aircraft and anti short and medium missile defenses independent of any proposed American MD system. The two systems are complimentary, not competing. The announcement reflects an increasing confidence and affluence of a country that is increasingly able to rely on its own strength for its security. Furthermore, prioritizing anti-missile defense reveals the Polish government’s growing focus on the primacy of territorial defense over expeditionary capabilities.

The Polish MD system is to be financed

from the savings of winding down the war in Afghanistan, and from the growth of military budget over the coming years related to Poland’s economic growth (Polish law mandates that 1.95 percent of GDP is spent on defense). According to initial estimates, it would be a pricy program, costing z³.8 billion to z³.15 billion over the next 10 years. Such costs would lower Poland’s appetite and ability to take part in expensive expeditionary missions. But with its increased focus on its own territory, don’t expect Poland to eagerly step up, as it did in Iraq and Afghanistan, if another hot spot boils over somewhere else in the world.

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Negotiating Nuclear Cooperation Agreements

Mark Hibbs, *NUCLEAR ENERGY*

BRIEF, August 7, 2012

The United States is currently negotiating bilateral agreements for peaceful nuclear cooperation under Section 123 of the U.S. Atomic Energy Act—so-called 123 agreements—with Jordan, Saudi Arabia, South Korea, and Vietnam. At some point—thus far no decision has been taken when—the United States will begin a fifth such negotiation, with Taiwan.

The negotiations with South Korea and Taiwan are to renew agreements set to expire in 2014, while the others are new. All five states want to deploy nuclear power reactors for electricity generation in the coming years and they seek benefits that would accrue from a formal legal framework for conducting its nuclear trade and diplomacy with the United States.

Although the Atomic Energy Act establishes criteria that 123 agreements must meet in order to conform to U.S. law without special Congressional consideration, for all of these negotiations to succeed the language and terms written into the five agreements will have to differ quite significantly. Why? Because the interest calculus and leverage balance of the two parties in each case won't be the same.

Progress in negotiating these agreements has been held up because of a contentious two-year interagency debate in the United States over how to proceed in trying to limit the spread of uranium enrichment and spent fuel reprocessing (so-called ENR) capabilities worldwide. In 2009, the United Arab Emirates (UAE) concluded a 123 agreement that said it would not "engage in activities within its territory" for ENR. The UAE agreement also indicated that the no-ENR provision was to be included in future 123 agreements for countries in the Middle East.

Some administration officials, supported by lawmakers, sought to universalize the UAE no-ENR provision as a "gold standard" for all future agreements, but others preferred instead to apply it on a limited case-by-case basis.

Since 2004, when the Bush administration proposed that ENR technologies be restricted to the few states currently having them—which includes the United States—many countries have objected that this would violate their "rights" to peaceful nuclear development, expressed in both the International Atomic Energy Agency (IAEA) statute and in Article IV of the Nuclear Non-Proliferation Treaty.

The United States sought to codify this ban in nuclear trade guidelines upheld by the 46-member Nuclear Suppliers

Group, but had to settle for a criteria-based approach adopted by the group in June 2011. Last fall, the U.S. House of Representatives introduced legislation that would set forth a blanket requirement that countries entering into nuclear cooperation with the United States forego ENR.

But neither Congress nor the administration at a senior level has set a firm policy course on what should be required in future 123 agreements, leaving it up to negotiators themselves to follow recommendations arising from lower-level internal deliberations. In practice, this means that there has been a strong difference of views between the State Department, which at high levels supports making the "gold standard" a requirement in all 123 agreements, and the Department of Energy, which favors a more differentiated approach also favored by the U.S. nuclear industry.

Currently, there is an interagency understanding that the State Department will aim to negotiate no-ENR provisions into nearly all future 123 agreements and that any exceptions to the no-ENR outcome must be jointly authorized by Secretary of State Hillary Clinton and Secretary of Energy Steven Chu.

Recent media accounts suggest that Taiwan has "volunteered" to adopt the "gold standard" and that one or more advocates at the State Department behind the scenes then pushed Taiwan to the top of the list of 123 agreements to be negotiated in order to quickly establish the "gold standard" as a precedent for all future agreements. But issues about the timing of the pending Taiwan negotiation were in fact triggered by a State Department staffer's travel schedule and were unrelated to any policy discussion.

Taiwan and the United States have understood from the very outset that because the United States has immense leverage over Taiwan, a four decade-old policy of no enrichment and reprocessing in Taiwan enforced by the United States will be enshrined in the new agreement. A new Taiwan agreement will not serve as a precedent for any of the agreements the United States is currently negotiating with other states because the United States enjoys far less leverage, and may have overriding policy goals, in these cases.

Vietnamese officials, for example, have informed their U.S. counterparts that they don't want to negotiate a nuclear cooperation agreement on the basis that Vietnam must forfeit its ENR "rights." Vietnam has little incentive to do so. While Taiwan's nuclear infrastructure was set up decades ago hand-in-hand with U.S. industry, Vietnam will build reactors with the help of Russia and Japan and it doesn't need an agreement with the United States to do that. Russia has agreed to supply fresh nuclear fuel to Vietnam and thereafter to take back and reprocess in Russia the spent fuel from reactors in Vietnam.

Hanoi has spelled out that it has no interest in setting up enrichment or reprocessing plants, and U.S. officials on the ground appear unworried that Vietnam will try to develop sensitive nuclear fuel cycle capabilities—a consideration that may matter should U.S. negotiators eventually ask Chu and Clinton to make an exception to the no-ENR policy for Vietnam.

Saudi Arabia might be a different story. While Vietnam has decided to bet its chips on nuclear energy partnerships with Russian and Japanese industry, Riyadh has so far not identified who its future industrial collaborators will be, and it is considering possible linkups with American firms. That

would not be possible without a 123 agreement.

The Saudi government is also aware that should Riyadh not assure Washington that it won't build sensitive enrichment and reprocessing installations, U.S. lawmakers, concerned about the security of Israel, would almost certainly forbid the United States to cooperate with Saudi Arabia on those terms. What's more, like neighboring UAE, Saudi Arabia may want to accommodate the United States in the interest of its bilateral defense arrangements, especially in view of its perceived threat from Iran.

The U.S. State Department is highly aware of the differences in the calculus of each of its prospective nuclear trading partners and the varying extent of U.S. leverage in these cases. Before Washington began broaching nuclear cooperation with Vietnam and Saudi Arabia, it had been negotiating bilateral nuclear agreements with South Korea and Jordan.

South Korea may become one of the exceptions made to a no-ENR outcome, as Seoul is hardly inclined to abandon its interest to enrich and reprocess. To the contrary, South Korea argues that Washington should afford it the same freedom to reprocess its growing inventory of spent fuel to minimize nuclear waste as the United States provided Japan when its 123 agreement was renegotiated in the 1980s.

The United States has long argued that a 1991 bilateral agreement between South Korea and North Korea, which commits both to renounce ENR, stands in the way. But South Korean officials argue that the bilateral agreement is null and void in the wake of North Korea's revelation that it is now enriching

uranium outside of IAEA safeguards, not to mention that it also produced plutonium outside of safeguards and used it in two nuclear explosions in 2006 and 2009. Officials argue that the size of South Korea's ever-expanding nuclear program—the country now has 23 power reactors—will soon justify the establishment of a domestic uranium enrichment capacity.

With the exception of the ENR issue, negotiation of a 123 agreement with Jordan is virtually complete. But Jordan, like Vietnam, will likely build power reactors in cooperation with non-U.S. vendors (in this case French or Canadian firms) and Jordan has informed the United States it will not negotiate away its generic “right” to enrich uranium or reprocess spent fuel.

Amman's refusal to legally forfeit its ENR options doesn't have to mean that Jordan can't accommodate the United States on this point if both sides really want a nuclear cooperation agreement. Instead of forcing Jordan to legally commit itself not to enrich or reprocess, the U.S.-Jordan agreement might include a declaration by Jordan—in a preamble or in a side letter—to the effect that Jordan will not set up sensitive fuel cycle infrastructure because it is not justified by the anticipated requirements of Jordan's nuclear power program.

Such a declaration may or may not be legally binding, but it would be politically robust in the context of a bilateral agreement with the United States. Jordan would retain its “right” to develop or acquire reprocessing and enrichment capabilities, but it could agree not to exercise this option. Jordan and the United States might agree to periodically reassess Jordan's nuclear fuel supply requirements.

A similar approach was successfully taken by Canada in a somewhat different context concerning its interest in enriching uranium. When the United States proposed to the Nuclear Suppliers Group in 2004 that transfers of ENR items to newcomers be banned, Canada objected. Unlike Vietnam, but like Jordan, Canada has domestic uranium reserves (indeed it's currently the world's leading uranium exporter) and, like Jordan, Canada does not want to forfeit its option to add value by processing the uranium into commercial power reactor fuel in coming years. In 2008, Ottawa overcame an impasse with the United States on this issue by voluntarily suspending its freedom to import enrichment technology for a limited period of time pending successful negotiation of global ENR trade rules.

U.S. resolve to include a no-ENR pledge in the body of new bilateral agreements will be seen by some countries as arrogant and unacceptable. Incorporating ENR terms into side-letters or preambles may be less offensive. That approach would also more easily facilitate including reciprocal commitments by the United States into its 123 bargains with foreign countries. These might include guaranteeing nuclear fuel supply through participation in the U.S. fuel bank, facilitating the country's access to other back-up sources of nuclear fuel, and, in the future, perhaps even taking back U.S.-origin spent fuel.

The outcome of any negotiation for a bilateral nuclear cooperation agreement will depend on the leverage both sides bring to the table. When the United States negotiated most of the 22 such agreements in force today, it was the world's leading provider of nuclear technology,

equipment, and fuel. As the examples of Jordan and Vietnam show, unlike half a century ago, nuclear newcomers today don't need to buy American.

The vendor field is populated by firms in Argentina, Australia, Canada, the European Union, Japan, Kazakhstan, Namibia, Niger, Russia, and South Korea, and in the future they will be joined by others in China and India. Governments in these countries do not seek to establish a no-ENR requirement as a condition for foreign nuclear cooperation. Some of them, Australia and Canada for example, have strong nonproliferation track records. Countries now seeking to form foreign industrial partnerships to set up nuclear power programs have numerous options and they will favor arrangements that provide them the most freedom and flexibility.

Equity in international nuclear affairs matters. By negotiating with its partners voluntary political agreements, including side benefits to limit the application of sensitive technologies, instead of trying to legally compel them to make concessions that are politically onerous, the United States can serve its nonproliferation and security interests while avoiding the challenge to U.S. credibility that would follow from rigid application of a one-size-fits-all policy.

The United States should show nonproliferation leadership by generally discouraging countries without enrichment and reprocessing capabilities from embarking in this direction. But negotiators need policy guidelines that provide for flexibility and encourage them to create incentives to get desired results. To some extent, the current policy may be informed by the insight that trying to negotiate no-ENR terms into the operative text of an agreement may fail, and that other approaches may be more

productive. It also reflects the reality that U.S. leverage on nuclear trade is declining.

In any case, negotiators and especially U.S. lawmakers—who must review and approve any new agreement—should not make the perfect the enemy of the good. If at the end of the day the United States must choose between having no agreement with a country and having an agreement without an unconditional and legally binding commitment to forego ENR, in specific instances, where the United States has little leverage and little to offer, the latter choice may be the right choice.

Right now, however, negotiators are not getting clear instructions from the top of the administration or from lawmakers about what new 123 agreements should require. In the case of some pending agreements, for example with Saudi Arabia, temporizing by U.S. leaders could set back U.S. economic and security interests. In some other countries, such as Australia and Canada, the cabinet approves a negotiating mandate before any bilateral nuclear cooperation talks take place. This kind of direction is needed in the United States, whether initiated by the White House or by Congress.

<http://carnegieendowment.org/2012/08/07/negotiating-nuclear-cooperation-agreements/d990>

J. Reports

HEARING: Nonproliferation and Disarmament: What's the Connection and What Does that Mean for U.S. Security and Obama Administration Policy?

Subcommittee on Strategic Forces:
Rayburn House Office Building –
2118, August 01, 2012

<http://armedservices.house.gov/index.cfm/2012/8/nonproliferation-and-disarmament-what-s-the-connection-and-what-does-that-mean-for-u-s-security-and-obama-administration-policy>

IAEA Press Releases: Press Release 2012/20

IAEA Expert Team Concludes Mission to Onagawa NPP

10 August 2012 | Tokyo, Japan — An IAEA team of international experts today delivered its initial report at the end of a two-week mission to gather information about the effects of the Great East Japan Earthquake on the Onagawa Nuclear Power Station (NPS), saying the plant was “remarkably undamaged”.

Findings from the visual investigation will be added to an IAEA data base being compiled by its International Seismic Safety Centre (ISSC) to provide knowledge for Member States about the impact of external hazards on nuclear power plants.

<http://www.iaea.org/newscenter/pressreleases/2012/prn201220.html>

Congressional Research Service: Major U.S. Arms Sales and Grants to Pakistan Since 2001: July 25, 2012

Read More at <http://fpc.state.gov/documents/organization/196190.pdf>

Congressional Research Service: Direct Overt U.S. Aid Appropriations and Military Reimbursements to Pakistan, FY2002-FY2013: July 27, 2012

Read More at <http://fpc.state.gov/documents/organization/196189.pdf>

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Indian Pugwash Society welcomes research articles from students, researchers and faculties on Space, Missile, nuclear technology, WMD proliferation, arms control, disarmament, export controls and other related issues. Articles should be crisply written and should address contemporary debates in the policy arena. Manuscripts submitted for the consideration of the Indian Pugwash Society should be original contributions and should not have been submitted for consideration anywhere else. Please confirm to the guidelines prescribed in the website before submitting the manuscript for consideration.

Details are available at: http://www.pugwashindia.org/contribute_articles.asp

The Indian Pugwash Society aims to promote the study, discussion, and knowledge of and to stimulate general interest in, and to diffuse knowledge in regards to problems relating on WMD proliferation, arms control, disarmament, space security, export controls, nuclear technology and other related issues. This newsletter is part of the project “Emerging Nuclear Order in Asia: Implications for India” sanctioned to us by Department of Atomic Energy-Board of Research in Nuclear Sciences (DAE-BRNS).

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