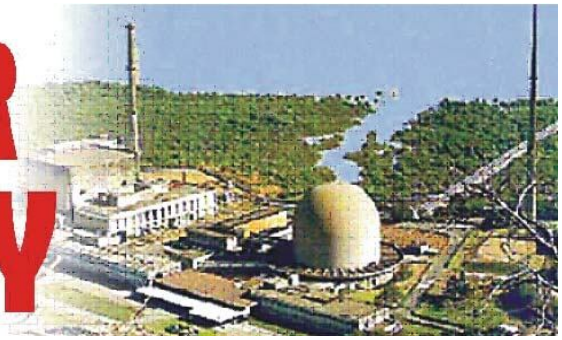


NUCLEAR SECURITY



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

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OPINION – Peter Weiss

Nuclear Disarmament, the State of Play

If psychosis is a loss of contact with reality, the current status of nuclear disarmament can best be described as psychotic. On the one hand, the nuclear issue is beginning to creep out from under the rug where it has lain dormant for several decades. On the other hand, the commitment of the nuclear weapon states to a nuclear weapons-free world is honoured more in the breach than in the observance.

Let us begin by adding up the pluses and the minuses of nuclear disarmament. On the plus side, we have a President of the US, which is central to the problem, who has spoken out repeatedly on the subject, albeit in a decelerating mode. In a speech at Purdue University on June 16, 2008, he said, "It's time to send a clear message to the world: America seeks a world without nuclear weapons ... we'll make the goal of eliminating all nuclear weapons a central element in our nuclear policy." There was no reference to how long it might take. In the famous Prague speech of May 6, 2009, Obama said, "I state clearly and with conviction America's commitment to seek the peace and security of a world without nuclear weapons", but he added, "This goal will not be reached quickly – perhaps not in my lifetime." He was 48 at the time. On Jun. 19, 2013, in Berlin, Obama said, "Peace with justice means pursuing the security of a world without nuclear weapons – no matter how distant that dream may be."

In all fairness, the trajectory to abolition announced in Prague has

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either been implemented or blocked through no fault of the president: A substantial reduction in nuclear arms has been negotiated with Russia and the role of nuclear weapons in US security strategy has been lessened. The ratification of the CTBT and the negotiation of a Fissile Material Treaty, both of which the Obama administration favours, have been held up, one by the US Senate, the other by another country. But reduction is not elimination and the DOD and DOE continue to pursue policies that are clearly incompatible with nuclear disarmament, to wit:

The Nuclear Employment Strategy of the US, issued by the DOD on June 19, 2013, states that nuclear weapons will be used only in extreme circumstances, but that it is too early to limit their employment

strictly to deterrence. The Assessment of Nuclear Monitoring and Verification Technologies, released by the Defence Science Board in January 2014, concedes that for the first time since the beginning of the nuclear age the US needs to be concerned not only with horizontal proliferation, i.e. to countries not possessing nuclear weapons, but also with vertical proliferation, i.e. in nuclear weapons countries. But the 100-page report makes no reference to monitoring and verification requirements in a nuclear weapons free world. On Feb 6, 2014, in an apparent violation of at least the spirit if not the letter of the NPT, the US announced that it had conducted a successful impact test (not involving an explosion) of the B-61 nuclear bomb. Donald Cook, deputy administrator for defence at DOE, said that engineering on the new bomb had commenced and that this would make it possible to replace older models "by the mid or late 2020s."

Thus, US policy on nuclear disarmament is at best a mixed bag; that of the other eight nuclear armed powers is not much better. Now for the good news. 2013 saw more encouraging action by non-nuclear powers than most previous years:

In February, 2013 the Foreign Ministry of Germany, a member of NATO, hosted a Forum on Creating the Conditions and Building a Framework for a Nuclear Weapons Free World convened by the Middle Powers Initiative. It was attended by 26 governments and a number of civil society organisations.

In March, 2013 the Foreign Ministry of Norway, another NATO country, convened in Oslo a Conference on the Humanitarian Impact of Nuclear Weapons, attended by 128 governments, and numerous civil society organisations.

On Oct 21, 2013 Ambassador Dell Higgie of New Zealand delivered to the First Committee of the UN the statement adopted by 125 countries, many of whom had attended the Oslo conference. It declared that the only way to guarantee that nuclear weapons will never be used again is through their total elimination.

A Governmental Open Ended Working Group on Nuclear Disarmament met for the first time in May

in Geneva and produced in August a report to the General Assembly which outlined a variety of approaches to reaching nuclear disarmament, including a section on the role of international law.

Also for the first time, on Sep 26, the General Assembly held a high level meeting on nuclear disarmament in which country after country, represented by Presidents, Foreign Ministers and other high officials, called for prompt and effective progress toward a nuclear weapons free world.

Finally, and most importantly, during the follow up conference to Oslo held in Nayarit, Mexico, Feb 13 and 14, Sebastian Kurz, the foreign minister of Austria, announced that he would convene a conference in Vienna later in 2014 because "the international nuclear disarmament efforts require an urgent paradigm shift."

The Vienna conference will not be simply a third rehearsal of the unspeakable horrors of nuclear weapons. It will get down to serious business, perhaps even the commencement of drafting a convention banning the use and possession of these weapons, as suggested by Secretary General

Ban Ki-moon. But there is a problem: The countries which have nuclear weapons have boycotted both Oslo and Nayarit. What if they boycott Vienna as well? That is the question. It is also the challenge facing the growing anti-nuclear weapons community, both official and unofficial. Embarrassment can be a tool of diplomacy. The NPT, to which the nuclear powers pay lip service, requires good faith efforts by all states to achieve a nuclear weapons free world. This is a good time to remind the nuclear states, and particularly the big five, of that all important obligation.

Source: <http://www.ipsnews.net/>, February 25, 2014.

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OPINION – Rizwan Asghar

Preventing Nuclear Terrorism

On Oct 11, 2001, exactly a month after the terrorist attacks on the WTC, President Bush was informed by his CIA director, George Tenet, about the presence of al Qaeda-linked terrorists in New York City with a 10-kiloton nuclear bomb. Overwhelmed by paralysing fear that terrorists could have smuggled another nuclear weapon into Washington DC as well,

President Bush ordered Vice President Dick Cheney, along with several hundred federal employees from almost a dozen government agencies, to leave for some undisclosed location outside the capital where they could ensure the continuity of government in case of a nuclear explosion in Washington DC. Although, after subsequent investigations, the CIA's report turned out to be false, this incident showed that even a false alarm signalling a nuclear attack could lead to a much higher probability of disaster. A nuclear attack in downtown Washington DC has the potential to kill hundreds of thousands of people immediately and wipe the White House, the State Department and many other buildings off the face of the earth, making the 9/11 attacks a 'historical footnote'.

It is evident that the spectre of a terrorist-controlled nuclear weapon is a real threat and is global in scope. Given the potentially disastrous consequences, even a small possibility of terrorists obtaining and detonating a nuclear device justifies urgent action. The most urgent security threat to the world today is the possibility of the stealing of weapons or fissile materials by terrorists. After the collapse of the Soviet Union, hundreds of confirmed cases of successful theft of nuclear materials were reported in Russia. In 1997, General Alexander Lebed, assistant for national security affairs to Boris Yeltsin, revealed that 84 out of 132 special KGB 'suitcase nuclear weapons' were unaccounted for in Russia. There are also widespread apprehensions expressed by the international community that militants could steal Pakistan's nuclear weapons or fissile material. Unfortunately, some incidents of jihadi penetration of Pakistan's armed forces have further fuelled this perception.

In 2001, US officials discovered that Osama bin Laden and his deputy, Ayman al Zawahiri, were in contact with two retired Pakistani nuclear scientists for assistance in making a small nuclear device. Later in 2003, some junior Pakistani army and air force officers colluded with al Qaeda terrorists to attempt to assassinate President Musharraf and enforce sharia in Pakistan. Notwithstanding that the dangers about the security of Pakistan's nuclear weapons might be highly exaggerated; some genuine concerns arising due to links between terrorists and government authorities must be immediately addressed. Umar Khalid Khurasani, the ameer (head) of the Mohmand Agency chapter of the TTP, also

wants to seize nuclear weapons and overthrow the government of Pakistan. Another potential source for the theft of fissile material is more than 130 civilian research reactors worldwide operating with HEU. Most of these facilities have very modest security - in many cases, no more than a night watchman.

Unlike the Cold War period, when both the US and the Soviet Union knew that a nuclear attack from either side would be met with a massive retaliatory strike, conventional deterrence does not work against the terrorist groups. In a famous 2007 *Wall Street Journal* article by Henry Kissinger, George Shultz, William Perry and Sam Nunn, it was claimed that, "Most alarmingly, the likelihood that non-state terrorists will get their hands on nuclear weaponry is increasing. In today's war waged on world order by terrorists, nuclear weapons are the ultimate means of mass destruction...unless urgent new actions are taken, the US soon will be compelled to enter a new nuclear era that will be more precarious, psychologically disorienting, and economically even more costly than was the Cold War."

Any effort by the international community to combat nuclear terrorism should be based on achieving three fundamental objectives: (a) securing all vulnerable stockpiles of nuclear weapons and materials from such risks of falling into terrorist hands, (b) preventing the spread of nuclear weapons to other countries, and (c) replacing all HEU in civilian research reactors worldwide with LEU, which cannot be used in making bombs. Countries where the dangers of terrorists stealing nuclear weapons are very high cannot afford to remain in a state of denial for too long. On the international front, immediate steps are needed to be taken to institute a 'standardised noncompliance mechanism' to enforce the NPT/IAEA framework.

In the 2015 NPT Review Conference, Article X of the NPT, which allows states to withdraw from the treaty with minimal sanctions, must also be re-examined. According to some nuclear experts, these steps should be accomplished through the UN Security Council. The Security Council must issue a 'binding resolution' declaring noncompliance with or withdrawal from the NPT to be a threat to international peace, thus attracting enforcement action by the Security Council under UN Charter Chapter VII. By reducing the number of countries with nuclear weapons or weapons-usable nuclear

materials, terrorist groups will have less places to buy or steal these critical components of nuclear terrorism. However, the credibility of these steps will be established only if the NPT NWS go beyond paying lip service to their commitment to Article VI of the NPT, which binds them to pursue efforts towards complete nuclear disarmament.

Though some modest gains have been made, the NWS have failed to take practical steps collectively to fulfil their obligations under the NPT. Such attitude results in undermining the legitimacy of the NPT/IAEA framework, and is detrimental to the cause of containing nuclear materials. As a significant step towards securing existing stockpiles of nuclear materials, the international community should implement the 2005 amendment to the Convention on the Physical Protection of Nuclear Material, as well as the International Convention of the Suppression of Acts of Nuclear Terrorism. The enforcement of these two conventions would help establish common standards for domestic nuclear security and enhance international cooperation in the realm of preventing nuclear terrorism.

Last but not least, enhancing 'nuclear attribution' capabilities can make states with nuclear weapons more accountable. Every nuclear device has certain chemical, physical and isotopic properties that can help determine the weapon's age and clues about its origins. These properties also give some information about the type of nuclear reactors from which the plutonium came or suggest the nature of the enrichment process used to make the uranium. In this way, the process of nuclear attribution will enable the international community to hold countries more accountable for the security of their nuclear materials.

Source: <http://www.dailytimes.com.pk/>, February 25, 2014.

OPINION – Gareth Porter

Resolving Nuclear Arms Claims Hinges on Iran's Demand for Documents

The Barack Obama administration has demanded that Iran resolve "past and present concerns" about the "possible military dimensions" of its nuclear programme as a condition for signing a comprehensive nuclear agreement with Tehran. Administration officials have suggested that Iran must satisfy the IAEA regarding the allegations in the agency's report that it has had a covert nuclear weapons programme in the past.

But the record of negotiations between Iran and the IAEA shows Tehran has been ready for the past two years to provide detailed responses to all the charges of an Iranian nuclear weapons work, and that the problem has been the refusal of the IAEA to share with Iran the documentary evidence on

which those allegations have been based. The real obstacle to providing those documents, however, has long been a US policy of refusing to share the documents on the assumption that Iran must confess to having had a weaponisation programme.

The head of Iran's Atomic Energy Organisation, Ali Akbar Salehi, declared Feb 12, 2014, "The authenticity of each allegation should be proven first, then the person who submitted it to the agency should give us the genuine document. When we are assured of the authenticity, then we can talk to the agency."

Neither the IAEA nor the Obama administration has responded publicly to Salehi's statement. In response to a query from IPS, the spokesperson for the National Security Council, Bernadette Meehan, said the NSC officials would have no comment on the Iranian demand for access to the documents. The spokesperson for IAEA Director Yukiya Amano did not answer a request from IPS for the agency's comment.

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But a draft text of an agreement being negotiated between the IAEA and Iran dated Feb. 20, 2012, shows that the only difference between the two sides on resolving issues about allegations of Iranian nuclear weapons work was Iran's demand to have the documents on which the allegations are based. The draft text, which was later published on the website of the Arms Control Association, reflects Iran's deletions and additions to the original IAEA proposal. It calls for Iran to provide a "conclusive technical assessment" of a set of six "topics", which included 12 distinct charges in the report in a particular order that the IAEA desired. Iran and the IAEA agreed that Iran would provide a "conclusive technical assessment" on a list of 10 issues in a particular order. The only topics that Iran proposed to delete from the list were "management structure" and "Procurement activities", which did not involve charges of specifically nuclear weapons work.

The two sides had agreed in the draft that the IAEA would provide a "detailed explanation of its concerns". But they had failed to agree on provision of documents to Iran by the IAEA. The IAEA had proposed language that the agency would provide Iran with the relevant documents only "where appropriate". Iran was insisting on deletion of that qualifying phrase from the draft. The first priority on the list of topics to which both sides had agreed in the draft was "Parchin" – referring to the claim of intelligence from an unnamed state that Iran had installed a large cylinder at the Parchin military reservation.

A Nov 2011, IAEA report suggested the cylinder was intended for testing nuclear weapons designs and had been built with the assistance of a "foreign expert".... The evidence associated with that claim and others published in the 2011 report shows that they were based on intelligence reports and documents given to the IAEA by Israel in 2008-09. Former IAEA Director General, Mohamed El Baradei referred to a series of documents provided by Israel in his 2012 memoirs.

Iran also agreed to respond in detail to allegations that Iran had sought to integrate a nuclear weapon into the reentry vehicle of the Shahab-3 missile, and

that it had developed high explosives as a "detonator" for a nuclear weapon. Both alleged activities had been depicted or described in documents reported in the US news media in 2005-06 as having come from a covert Iranian nuclear weapons programme. Those documents, about whose authenticity ElBaradei and other senior IAEA officials have publicly expressed serious doubts,

have now been revealed as having given to Western intelligence by an anti-regime Iranian terrorist organisation.

Former senior German foreign office official Karsten Voigt revealed in an interview in 2013 for a newly-published book by this writer that senior officials of

the German intelligence agency BND had told him in November 2004 that the BND had gotten the entire collection of documents from a member of the Mujahedin-e-Khalq who had been one of their sources, and that they did not consider the source to be reliable. The MEK, considered by the United States and European states as a terrorist organisation, had been used by Saddam Hussein's regime to support the war against Iran and by Israel to issue intelligence and propaganda that Mossad did not want attributed to it.

ElBaradei, who retired from the IAEA in November 2009, had declared repeatedly that sharing the documents was necessary to ensure "due process" in resolving the issue, but the United States had prevented him from doing so. In his final statement to the Board of Governors on Sep. 7, 2009 he appealed to "those who provided the information related to the alleged weaponization studies to share with Iran as much information as possible." A former IAEA official, who asked not to be identified, told IPS that the

United States had allowed only a very limited number of documents to be shown to Iran in the form of Power Point slides projected on a screen.

A May 2008 IAEA report described a number of documents purported to be from the Iranian weapons programme but said that the IAEA "was not in possession of the documents and was therefore unfortunately unable to make them available to Iran." Around 100 pages of documents were given by the United States to the agency to

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share with Iran, the former official said, but none of the documents described in the report were among them.

The US policy of denying Iranian access to the documents continued during the Obama administration, as shown by a US diplomatic cable from Vienna dated Apr 29, 2009 and released by WikiLeaks. At a P5+1 technical meeting, both US and IAEA officials were quoted as implying that the objective of the policy was to press Iran to confess to the activities portrayed in the papers. US officials said that a failure by Iran to “disclose any past weaponization-related work” would “suggest Iran wishes to hide and pursue its past work, perhaps to keep a future weapons option”. IAEA Safeguards Chief Olli Heinonen made it clear that no copies of the relevant documents charging Iran with weaponisation would be provided to Iran and complained that Iran had continued to claim that the documents were fabricated. In its report of Nov 14, 2013, the IAEA said it had received more information – presumably from Israel – that “corroborates the analysis” in its 2011 report.

According to the available data at Pakistan Electric Power Company, electricity generation capacity is estimated to about 22,500MWe. The average demand is 17,000 MWe and the deficit averages between 4,000 and 5,000 MWe. Oil (35.2 per cent), hydel (29.9 per cent), gas (29 per cent), and nuclear and imported (5.8 per cent) are the principal sources.

The past unwillingness of the Obama administration to entertain the possibility that the documents provided by the MEK were fabricated or to allow Iran the opportunity to prove that through close analysis of the documents, and the IAEA's continued commitment to the weaponisation information it has published suggest that the issue of past claims will be just as contentious as the technical issues to be negotiated, if not more so.

Source: <http://www.ipsnews.net/>, March 1, 2014.

OPINION – Usman Ali Khan

Unveiling Pakistan's Nuclear Mystery

Pakistan is facing one of its worst energy crises in its history. Blackouts last for more than half a day in many of cities, including the financial and industrial hub, Karachi. The shortage of electricity and gas has badly affected the country's economy. Also with the population growth, demand for electricity is set to increase exponentially. According to the available data at Pakistan Electric Power Company, electricity generation capacity is estimated to about 22,500MWe. The average demand is 17,000 MWe and the deficit averages between 4,000 and 5,000 MWe. Oil (35.2 per cent), hydel (29.9 per cent), gas (29 per

cent), and nuclear and imported (5.8 per cent) are the principal sources.

Due to this huge energy shortage peak electricity demand is expected to rise in the next 10 years by four to five per cent. To overcome the energy crisis in Pakistan there is a dire need to come up with long term and sustainable policies. While the unfolding disaster at Japan's Fukushima reactor gripped the world and countries like Germany used the event to shift their reliance on other expensive alternatives, Japan is reverting back to nuclear power generation.

The lessons are simple. Japan can ill afford to shift to other sources of energy and the cost of improving its nuclear safety is much lesser than relying on other alternatives. Conversely, Germany might not have placed its all eggs in non-nuclear energy basket for safety reasons, facing gigantic challenges. The other energy sector lobbies might have used the Fukushima as an opportunity. Interestingly, Germany is spending billion's for decommissioning its nuclear plants as it is estimated it will cost roughly €1 billion (\$1.3 billion) to decommission a single nuclear reactor and billion's to bridge the energy gap from other alternatives.

It is common knowledge that Pakistan needs uninterrupted electricity at the lowest possible cost. Like in Japan, nuclear energy presents that ceaseless and less expensive option. This simple analogy appears too complex for a fringe of naysayers who fail to provide a workable and sustainable solution to the electricity generation crisis. Currently energy shortages are staggering the economy and contributing to unrest. But the country has options. The kind of electricity generated from oil, solar, wind and hydro-electric is not cost effective along with complementary environmental hazards in addition. With zero emission of carbon dioxide, nuclear presents a viable option in shape of reliable supply at a competitive price.

Moreover, we just don't have the state of the art technology required to convert the lignite coal found in Thar coal reserves into gas. Open pit mining of the coal would require massive amounts of water, which is already scarce in the Thar Desert. Apparently there is not one single scientific study on record that claims that Thar coal is both technologically and economically viable. Why waste so much money investing in fossil fuel when we are

blessed with excellent track record of operating nuclear power plants?

Pakistan's ability to meet its energy requirements indigenously is constrained by the relatively poor quality of its coal, the feast or famine nature of hydroelectric power in a monsoon climate, and the political and security challenges of tapping effectively the natural gas reserves in its Baluchistan province. Pakistan will have to seek energy security through a mixture of external and internal sources. As one element of a long-term plan for energy diversity, nuclear power makes sense for Pakistan, as it does for many states. Pakistan thus far has a very good nuclear safety record, but a newer design would be preferable.

According to the NTDC, annual electricity growth rate is estimated to hover around 5-6% over the next ten years, which translates to peak electricity demand of 32,000 MWe by 2020. So, to make a real and significant dent in Pakistan's electricity shortage, much larger reactors would be needed. Against this background, the fundamental question is: are the existing probations of our power policy appropriately encompass the evolving technologies to ensure our energy needs? The answer to this question is: No. Pakistan has no other option except gradually reduce its reliance on imported fuels, indigenize, have a healthy energy mix and produce electricity primarily through nuclear power.

The Fukushima disaster was not owing to the failure of nuclear power plant and because these were old generation models. It was because the electrical power supply to the plant failed due to massive unprecedented tsunami. It may be recalled that there were no radiation related casualties in Fukushima. Japan and other states have learnt from this experience and have taken steps to enhance nuclear safety features at the existing plants and in the designs of upcoming plants. Pakistan is not an exception to this international best practice. Nuclear energy remains popular. Who does not want it? Nuclear power plants are being built in the US,

U.K., China, India, and even in countries that have vast fuel reserves like UAE.

By 2050, Pakistan plans to generate more than 40,000 MWe through nuclear plants. The two Chinese-funded nuclear plants are expected to be completed by 2019 and will generate some 2200MWe which will be more than the combined power of all nuclear plants operating in the country. Like Japan, Pakistan cannot afford to demur and waste time in considering the feasibility of nuclear energy. Its electrical power requirements are so large that all alternative sources of energy are welcome and nuclear energy is one of the alternatives. It is a need of time that to get rid of this long continued fear and salute the government for building the nuclear power plants and marshaling other sources of energy.

Source: <http://www.eurasiareview.com/>, March 4, 2014.

OPINION – Kayhan Barzegar

Nuclear Terrorism: An Iranian Perspective

Nuclear terrorism was first identified by the United States as a unique concern at the Washington NSS of April 12-13, 2010. At that meeting, President Obama maintained that access to nuclear weapons by terrorist groups was "the single biggest threat to US security, both short-term, medium-term, and long-term."

This issue was highlighted again at the Seoul NSS March 26-27, 2012. The US view of this threat as critical and imminent will affect international politics, especially Iran-US relations, from now on. For instance, here is the way the United States views Iran in the context of nuclear terrorism in its 2010 NPR: "The United States will not use or threaten to use nuclear weapons against non-nuclear-weapons states that are party to the NPT and in compliance with their nuclear-non-proliferation obligations" — except the states that the United States deems to be in violation of the NPT: Iran and North Korea. The United States

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The United States explicitly threatens non-nuclear-weapons states in its official doctrine, emphasizing the deterrent and weaponization aspects of Iran's nuclear program, on the one hand, and refuting Iran's potential to counter nuclear terrorism by excluding Iran from nuclear-security summits, on the other.

explicitly threatens non-nuclear-weapons states in its official doctrine, emphasizing the deterrent and weaponization aspects of Iran's nuclear program, on the one hand, and refuting Iran's potential to counter nuclear terrorism by excluding Iran from nuclear-security summits, on the other.

From an Iranian perspective, the issue of nuclear terrorism can incorporate both challenges and opportunities in interstate affairs, including Iran's relations with the West. The challenges can be discussed from three perspectives. The first is the probability and imminence of nuclear terrorism to the international community and individual states like Iran. Will the US adopt a broader interpretation of the use of force in the form of preemptive war under the pretext of a new threat to international security? Some analysts believe that the US is exaggerating this issue. Second, one might argue here that the main objectives behind raising this issue include the world powers' monopoly over nuclear arsenals, maximizing their control over global nuclear subjects dominating the IAEA, controlling nuclear fuel and crushing the resistance of independent nations. Third is the emphasis on the issue of deterrence and the relationship between nuclear terrorism and comprehensive nuclear disarmament.

Some analysts in the West argue that the issue of nuclear terrorism is raised mainly to divert public attention away from comprehensive nuclear disarmament. From an Iranian perspective, however, the main US goal in raising this issue at the regional level is essentially to maintain a balance of power and deterrence in the region in order to ensure Israel's nuclear monopoly. Such challenges have made Iran pessimistic about the issue of nuclear terrorism, particularly when the country, despite possessing nuclear materials, has so far not been invited to any nuclear-security summits. These meetings impose commitments on Iran without offering it any privileges.

However, the threat of nuclear terrorism could bring about opportunities to advance cooperation and confidence building between Iran and the United States. Iran's nuclear reactor — the Bushehr nuclear

plant — is operating with nuclear materials, and the Russians are to hand over control of the facilities to the Iranians shortly. Therefore, the cooperation of the West in ensuring the safety of Iran's nuclear materials could prepare the ground for further collaboration between Iran and the West. With the pragmatic President Hassan Rouhani now increasing hope for further cooperation, a positive gesture from the Western side could build confidence in Iran's domestic politics among Iranians and consensus among the political elites.

It is also important to have a realistic view towards the issue of battling terrorism. Linking nuclear and conventional terrorism, on the one hand, and deterrence and Iran's nuclear program, on the other, has distorted these threats. This situation has subsequently put undue pressure on countries such as Iran. In addition, nuclear terrorism can be a good starting point for regional cooperation. In this respect, the West's recognition of Iran as a nuclear state would encourage Tehran to offer comprehensive cooperation in tackling the threat of nuclear terrorism, especially at the regional level. Iran is situated at the center of the region in which most of the nuclear terrorist activities by groups such as al-Qaeda would presumably take place. Such an approach would undoubtedly lead to trust building, marking a turning point in regional and global cooperation.

Source: <http://nsnbc.me/>, March 4, 2014.

OPINION – Peter Huessey

The Disarmament Fallacy

The campaign to reach "global zero" — the elimination of all nuclear weapons worldwide — has become a cause celebre among an array of retired statesmen, as well as an important policy priority of President Obama himself. But this effort is handicapped by its adoption of several seriously wrong-headed assumptions, positions and ideas that US media outlets have tended to swallow without careful scrutiny. The first and more egregious problem is the campaign's radical proposal to eliminate the nearly 500 existing US land-based missiles and their associated launch control facilities.

Doing so would reduce American nuclear assets by upward of 98 percent.

It would also give adversaries of the US added incentive to try challenging American nuclear primacy. Then there is the assumption that further nuclear reductions by the United States (even unilateral ones) will induce other aspiring or existing nuclear powers to do the same. However, the historical record supports no such conclusion. Since the Reagan administration, four successive arms control agreements — the INF treaty, START I, the Moscow treaty and New START — have reduced our nuclear arsenal by close to 90 percent. Yet, over that same period, China has multiplied its nuclear force, Pakistan and India have produced hundreds of nuclear weapons, North Korea has amassed a stockpile of roughly a dozen nuclear devices, while Iran continues to seek nuclear weapons (despite its protestations to the contrary). And the fond hope that our allies would help us push back on such proliferation has turned out to be more dream than reality.

There is no reason to believe, then, that further strategic cuts in Washington will precipitate the same in Beijing, Pyongyang or elsewhere. To the contrary, they are very likely to prompt the opposite. Wrong, too, is the assumption, relied on by many, that because nuclear weapons did not deter the attacks of 9/11 they are not useful tools for protecting the United States in the security environment that has emerged thereafter. This reasoning contains a core fallacy. While our nuclear deterrent can stop conventional and other military conflicts from getting out of hand, it is not designed to stop all attacks, especially those of a surreptitious nature not tied to a nation state (like the attacks on New York and Washington perpetrated by al-Qaida). But that does not in the least invalidate the importance of possessing a robust nuclear arsenal when confronting strategic competitors like Russia and China and hostile states such as Iran and North Korea, which rely on their own strategic capabilities in times of warfare.

Most crucially, advocates of “global zero” assume that the security of our allies won’t be affected if the US

nuclear deterrent is significantly curtailed. In reality, as former Senate Majority Leader Robert Dole explained in 2013 in a Capitol Hill speech, some 31 countries now depend upon our nuclear umbrella for their security. If that shield appears flimsy or dented, these states will seek their own nuclear weapons. In fact, recent debates in places like Japan and Saudi Arabia underscore that, absent a credible US strategic guarantee — one backed up by a robust nuclear arsenal — emerging nuclear threats could well precipitate a run on the atom, with disastrous consequences for global security. It stands to reason, then, that for all of its lofty goals “global zero” could very well exacerbate the very problems that it aims to curtail. A logical corollary is that America, in pursuit of the perceived security of fewer nuclear weapons, is actually making both itself and its allies a great deal less secure.

Source: <http://www.usnews.com/>, March 4, 2014.

OPINION – Jonathan Power

The Nuclear Triumph

It was the Americans, back in the time of the deposed Shah, who encouraged Iran to develop a nuclear bomb-making capacity. Now it is the Americans, along with the Europeans, who are desperately trying to undo their folly. They are nearer the goal than they think, or, rather, let on. Perhaps they are playing their cards too close to their chest? Is this what is necessary for the administration to position itself to assuage Congressional opinion? As long as both Iran and the US make sure, as the saying goes, they don’t “miss an opportunity to miss an opportunity” they should get home and dry well before the end of the six months allowed to complete final negotiations.

The Supreme Leader Ayatollah Ali Khamenei, who is ultimately the deciding figure, has long ago made his position clear. He has said on more than one occasion, indeed has issued an edict to this effect, that to possess nuclear weapons goes against God. Iran is a highly religious nation and these words of his cannot be taken lightly. He cannot put them on one side, even if the Americans prove difficult.

Wrong, too, is the assumption, relied on by many, that because nuclear weapons did not deter the attacks of 9/11 they are not useful tools for protecting the United States in the security environment that has emerged thereafter. This reasoning contains a core fallacy. While our nuclear deterrent can stop conventional and other military conflicts from getting out of hand, it is not designed to stop all attacks, especially those of a surreptitious nature not tied to a nation state.

Moreover, we have the statements of US intelligence of 2007 and repeated twice since that Iran has abandoned its nuclear weapons programme.

If all this be true why don't the delegates go home and put their feet up? Because on one side the Iranians have their pride, not only politically but in the way, despite all the sanctions, they have been able to get so far in developing nuclear technology. Moreover, they want to secure the right to enrich uranium to be used to fuel their power stations, which at one time the US wanted to deny them. To the outside world this doesn't seem to make much sense in a country swimming with oil. But to those Iranians who take the long view on energy supplies it is best to have alternative — it is also investing in solar and wind power. And then there are probably some people in the Iranian nuclear establishment who do want Iran to be, as Pakistan was for a long time, "only a screwdriver away" from having a serviceable bomb. They have to be satisfied too or they could be, with their friends in the military, a source of opposition to the government.

The Americans and, to a lesser extent the Europeans, have doubting constituents to pacify. Having made such a fuss in the days of President Bush, when Iran was seen as part of "the axis of evil", public opinion is suspicious of Iran's motives and purposes. Iran's counter-rhetoric over the years has not been helpful. Now the US has to prove beyond all doubt to the voters that there is no bomb-making activity at all.

In November 2013, the participants in the Geneva negotiations announced a six-month deal to be followed by a more comprehensive, permanent, agreement six months later. The US and EU terms are clear. To prevent Iran from using the negotiations to buy time whilst it gets on with its nuclear development, Tehran has agreed to halt production of uranium enriched to 20 per cent. (It would have to be enriched to over 90 per cent to make a bomb.) Tehran would have to keep its capacity for enrichment stable by stopping the operation or the installation of additional advanced centrifuges. It has also agreed to halt progress on the reactor under construction at Arak that is designed to produce

plutonium, also a weapons fuel. These are the essential elements in any deal. In fact the actual agreement of November goes far beyond this. It came as a surprise to many nuclear specialists that Iran agreed it would eliminate its stockpile of 20 per cent enriched uranium (either by diluting it or converting it into an oxide form that is not adaptable to further enrichment).

Added to this, the agreement requires daily access for the inspectors of the IAEA and the permanent use of cameras to monitor all activity. Surveillance will be more extensive than anything conceived before. It will monitor uranium mines, mills, centrifuge production and assembly facilities. One should now turn to the Fact Sheet issued by the White House Press office on November 23, 2013. It is a five-page single-spaced summary of what was agreed. Nearly two pages are taken up with what Iran has agreed to. It is an impressive list that the Press has largely ignored. Reading this it is difficult to see what else the Iranians can be asked to do to complete a final agreement. The hard work has in fact been done. As long as the Iranians do nothing to upset what they have agreed to in the interim agreement, signing a comprehensive agreement in six months' time should not prove difficult.

Source: <http://www.khaleejtimes.com/>, March 6, 2014.

OPINION – Beenish Altaf

Safety and Security of the Pakistan Nuclear Power Plants

The misperceptions and misconceptions regarding the safety and security at NPP have given birth to several counter debates among the nuclear energy supporters and anti-nuclear energy lobby within Pakistan. The subject needs to shed light on the rationality of anti-nuclear activists' concerns and anxiety that the power plants are not working under appropriately stringent security arrangement. Has Pakistan adopted advanced safety measures for its forthcoming Karachi NPP Reactors especially following what happened in the Japan tsunami?

The CHASNUPP-I installed in 2000 and CHASNUPP-II installed in 2011 respectively, are the commercial

The Americans and, to a lesser extent the Europeans, have doubting constituents to pacify. Having made such a fuss in the days of President Bush, when Iran was seen as part of "the axis of evil", public opinion is suspicious of Iran's motives and purposes. Iran's counter-rhetoric over the years has not been helpful. Now the US has to prove beyond all doubt to the voters that there is no bomb-making activity at all.

nuclear power generation reactors near Chashma city, Punjab. 'Chashma Nuclear Power Plant's reactors and other facilities are being built and operated by the PAEC with Chinese support.' Both these Chinese plants are working efficiently and have room for two more units of CHASNUPP-III and CHASNUPP-IV for construction. It is noted that loan has been afforded by China on soft terms for both these underway reactors whose safety and security have been ensured as they have been previously tested as well as tried by Chinese experts.

The Karachi NPPs will house a reactor larger than the combined power of all the nuclear reactors operating in the country at the moment. The first plant KANUPP-I, was inaugurated in December 1972 with commissioning of the 137 MW nuclear energy, whereas 'KANUPP-2, KANUPP-3 and KANUPP-4 will be built with the assistance of China to generate 2,400 megawatts.' Primarily, the scheme of both reactors was an outcome of 'Nuclear Energy Vision 2050, an official Development Plan, according to which nuclear power will generate up to 40,000 megawatts of electricity by the middle of this century. At present it produces less than a 1,000 megawatts.' Undoubtedly, it is the first step towards 'a load-shedding free Pakistan' promised by the PM Nawaz Sharif.

Spotlighting the subject matter, the pessimistic apprehensions on the contemporary debate over power plant's effective running and the warnings given by the anti-nuclear activists deemed that "the 20 million people of Karachi are being used as subject in a giant nuclear safety experiment." It has also been advocated that the, KANUPP-I and KANUPP-II designs are not satisfactory according to international standards. The admonition comes from Dr. AH Nayyar, a Pakistani Physicist and Nuclear Activist, Dr. Pervez Hoodboy, Pakistani Physicist and Nuclear Activist, and Dr. Zia Mian, Pakistani-American physicist. Both of these nuclear reactors are under strict safety guidelines — not only in their design but also take account of fear of tsunami and earthquake.

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Subsequently, the allegation that the Karachi coastal area or more precisely the K-I and K-II installation site is prone to earthquakes and tsunami, has been responded to, by the announcement made by Mr. Azfar Minhaj, Project Director for the Karachi Power Plant Project. He said that the reactor site is 12 meters above sea level. Accordingly, the PAEC affirmed it to be 'providing optimum location for a nuclear power plant in general areas.'

Another hanging apprehension on KNNP is the accident due to disruption of electricity as it happened in the most recent 2011 Fukushima disaster. As a safety measure, an uninterrupted and continuous power supply has been ensured as reported by Umer Farooq, in his write-up quoted by some anonymous scientist that each plant will get two electricity connections from the national grid; two diesel-run power generators and an alternative air conditioning system. Even if all these measures fail, still there are a number of passive measures to cool down the plant.

Moreover, Dr. Ansar Parvez, Chairman, PAEC confirmed that "K-2 and K-3 are ranked amongst the safest reactor systems available anywhere in the world, as the ACP1000 model selected for the new reactors is based on the well-tested PWR concept of which hundreds of systems are operating around the world." Mr. Minhaj explained the ACP1000 design as a Generation-III plant and boasts 'Passive Safety Systems (PSS),' which means that no active interference is needed if something goes wrong. These passive safety systems help the plant's engineers or operators a maximum of 72 hours to act in case of emergency situations as its been incorporated with additional security measures unlike the Chernobyl and Fukushima accidents. Similarly, Pakistan's nuclear reactors fulfil the IAEA safeguards as well.

In addition, the coastal vicinity where the plants have been installed are nearly 25 kilometres away from the populated areas. Contrarily, there are numerous power plants close to huge population centres like Guangdong in China, Kuosheng in Taiwan and Indian Point near New York City. Above and beyond, Fukushima disaster, where 200,000 people lived close to power plant reactors become easily

victimized of the radiation leakage accident but as far as Pakistani coastal site is concerned, there is very little population even after 15 km of the reactor's radius.

Pakistan's position of NPP does not coincide with the wretched incidents of 1979 Three Mile Island, 1986 Chernobyl Nuclear Accident and 2011 Fukushima disaster. The Chairman, PAEC expressed his satisfaction over the KANUPP-I that it has been functioning for the last 40 years, where neither it released any radiation nor did it create any other problem for the population of the city. Furthermore, the K-II and K-III reactors according to the PAEC are double containment plants that mean radioactivity will remain inside the plant even in case of an accident; there would be zero chances of radioactivity coming out of a plant. The power plant does not emit greenhouse gas as well.

However, the speculations and presumptions regarding the safety, design and operating procedures will remain questionable till the NPPs become operational. Furthermore, the prevailing accountability of Pakistan's options for nuclear energy would also incorporate the strategic perspective and geo-political considerations in its debate. Nevertheless, the fact, that Pakistan's energy crises need some solution at this instant make the apprehensions part of the solution.

Source: <http://www.eurasiareview.com/>, March 7, 2014.

OPINION – Anja Manuel

The Nuclear Option for Emerging Markets

In 2013, greenhouse gas emissions reached a record high of 39 billion tons. Emissions actually dropped in the US and Europe, but substantial increases in China and India more than erased this bit of good news. That is all the more reason to focus on innovative solutions that slow the growth in emissions from emerging markets. The US-India civilian nuclear deal is one such solution.

The key principles of this agreement were signed by President Bush and PM Singh in 2006. The deal brought India's civilian nuclear program under the IAEA's inspection regime. In return, Washington removed sanctions and permitted India to build nuclear power plants with foreign help. Most of the discussion leading up to the deal has focused on its potential effect on non-proliferation treaties and on the partnership between the US and India. The deal's most lasting effect, however, may well be its role in reducing the growth in greenhouse gas emissions, while giving India the electricity it desperately needs.

India is growing rapidly. In recent years its economy has expanded by 6% to 7% per year. This growth is exacerbating a voracious appetite for electricity that India's bankrupt utilities are unable to satisfy. India's electricity generation still relies almost 60% on coal. Blackouts are common.

Under the deal, Russia will build up to 18 nuclear plants in India, with France and the US also interested. Understandably, the Fukushima nuclear disaster aggravated the concerns of those who are worried about potential accidents from nuclear power plants. Germany has decided to

phase out nuclear energy completely by 2022. Japan shut down its nuclear reactors after the disaster, though its new government recently announced a return to nuclear energy use. These are, however, high-income countries that don't face the enormous energy supply-demand imbalance that India confronts.

Without additional nuclear power plants, the Indian think tank CEEW estimates that by 2095 India will produce an extra 1 billion tons of carbon per year... If India chooses to abate those carbon emissions through the use of alternatives without turning to nuclear power, it would spend a full 2 percent of its gross domestic product annually to do so. By contrast, a Stanford scientist estimated in 2006 that by increasing the production of clean nuclear energy to just 20 gigawatts, India would reduce its carbon emissions by more than 130 million tons each year. (For comparison, the full range of emission cuts

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planned by the European Union under the Kyoto Protocol will total 200 million tons per year).

If new nuclear power reactors can be constructed with the latest safety features — and international monitoring ensures that accidents are unlikely to occur — the US-India civilian nuclear deal will be a massive win. This type of large-impact, bilateral initiative may help the world get around the multilateral bickering of the Kyoto process and have a lasting positive impact on the environment.

Source: <http://www.reuters.com/>, March 7, 2014.

OPINION – Julio Godoy

NATO and Russia Caught in New Nuclear Arms-Race

The US government is unofficially accusing Russia of violating the 1987 INF Treaty, by flight testing two-stage ground-based cruise missile RS-26. Although the US government has not officially commented on the alleged Russian violation of the INF, which prohibits both countries to producing, testing and deploying ballistic and cruise missiles, and land-based missiles of medium (1,000 to 5,500 km) and short (500 to 1,000 km) range, high ranking members of the government in Washington have been leaking information to US media, in a moment of particular tense relations with Moscow.

In 1987, after years of negotiations, both the NATO and the then Soviet Union agreed to destroy and to stop production of all missiles and related weapons, for instance the US Pershing I and Pershing II and the BGM-109G Gryphon arsenals. Moscow, on its part, eliminated the whole SS missile series, including the SSC-X-4, in 1987 its most modern, land-based cruise missile with a nuclear warhead. According to a report by the *New York Times*, the tested missile RS-26 aims at filling “the gap left in the missile potential of Russia as a result of the limitation of INF.” The newspaper also indicated that mid-January, the acting Assistant Secretary of State Rose Gottemoeller informed the NATO of the US data.

US military experts, such as Dan Blumenthal and Mark Stokes of the American Enterprise Institute, say that the main Russian problem with the INF is that China is not bound by it and continues to build up its own Intermediate-Range forces. In a comment for the *Washington Post*, Blumenthal and Stokes wrote that “Moscow has already threatened to pull

out if China does not sign the treaty.” If the US reports are true, the Russian tests would confirm what numerous peace and anti-nuclear weapons activists have been warning about since several years, that the NATO and Russia are engaged in a new nuclear arms race, despite all the bilateral talk about disarmament.

For the NATO has also been “filling the gaps” of its nuclear capability, in particular with the ongoing plan to “modernise” its arsenal of B61 nuclear weapons, stationed all over Western Europe. Additionally, practically all nuclear states, including India, Israel, North Korea, and Pakistan have at one time or other in recent years improved their arsenal on middle range rockets and nuclear weapons. The formidable B61 arsenal stationed in Europe is a remnant of the Cold War. The actual number of such weapons of

All these risks were confirmed during several hearings at the US congress late last year, and during which military officials explained the range of modernisation the B61 arsenal is expected to go through. Officially, the US government has dubbed this modernisation of the B61 arsenal “a full-scope Life Extension Program.

mass destruction is a top military secret, but some 20 of these are reported to be deployed in Germany, in the military basis near the village of Buechel, in the southwest of the country. Another undetermined number, up to 200 such weapons, are deployed in Belgium, Italy, the Netherlands and Turkey, all members of the NATO.

According to the NATO, or, rather, to the US government, the modernisation of this nuclear arsenal is necessary given the archaic character of the B61 weapons. They are so-called dumb or “gravity” weapons, to be dropped from war planes over target zones, and be guided by a radar that, according to US senate hearings, was constructed in the 1960s and originally designed for “a five-year lifetime”. Dropping such dumb nuclear weapons from an airplane would mean that, even in case they operate as expected, vast areas would be obliterated from the face of the earth.

Additional Dangers: The old B61 nuclear bombs manifest several additional dangers, especially for the own NATO armies and European populations: In 2005, a US Air Force review discovered that procedures used during maintenance of the nuclear weapons in Europe held a risk that a lightning strike could trigger a nuclear detonation. In 2008, yet another US Air Force review concluded that “most” nuclear weapons locations in Europe did not meet US security guidelines and would “require significant additional resources” to bring these up to standard.

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which military officials explained the range of modernisation the B61 arsenal is expected to go through. Officially, the US government has dubbed this modernisation of the B61 arsenal “a full-scope Life Extension Program”, as Madelyn R. Creedon, assistant secretary of defence for global strategic affairs, told a session of subcommittee of the House of Representatives in October, 2013.

During the session, Creedon described the B61 as “the oldest warhead design in the US nuclear stockpile, with several components dating from the 1960s.” She added that its modernisation “will meet military requirements and guarantee an extended service life coupled with more affordable sustainment costs; and it will incorporate the upgrades that NNSA deems mandatory to provide a nuclear stockpile that is safe, secure, and effective.” During the same hearing, General C.R. Kehler, head of the US strategic command, told the representatives what many peace activists have been saying since years, but the NATO always and only until recently denied. ... If the schedule for the modernisation is to be respected, the new B61-12 weapons will be ready by 2020, and the programme would have cost at least eight billion US dollars, according to the NNSA's current estimate.

However, as the Centre for Arms Control and Non-Proliferation has pointed out, an independent US Defence Department assessment found that the actual cost could be higher than \$10 billion. At this price, the LEP will cost \$25 million per bomb. The Centre recalls too, that the Ploughshares Fund complained that at this cost each refurbished B61 will be worth more than its weight in gold. According to critics of the LEP, the modernisation won't mean only “a life extension programme”, but instead a formidable increase of the weapons' capabilities.

Most Problematic: This extraordinary improvement of the B61 arsenal's mass destruction potential is the most problematic, for the European governments concerned, in particular in Germany, have since at least 2009 openly expressed their wishes to dismantle the weapons. In reaction to the historic speech US president Barack Obama made in the Czech capital Prague in April 2009, where he called the nuclear weapons spread across the world “the most dangerous legacy of the Cold War”, the Berlin government of the time argued in favour of the dismantling the archaic B61 stationed on German soil. In what it was called “an unprecedented

statement”, Frank-Walter Steinmeier, Social Democratic German foreign minister of the time, called for the withdrawal of the US nuclear weapons deployed in his country. In April 2009, only days after Obama's speech in Prague, Steinmeier told the German magazine *Der Spiegel* that “the (B61 nuclear) weapons are militarily obsolete today” and promised that he would take steps to ensure that the remaining US warheads “are removed from Germany.”

In the two years that followed, the next German conservative government, represented by its new foreign minister Guido Westerwelle, continued to make the case for dismantling the B61 arsenal. Like his predecessor Steinmeier, Westerwelle, serving for the Christian Democratic-Liberal ruling coalition, made the arguments of the anti-nuclear weapons activists his own, and recalled that such arsenal is in many ways obsolete, for it was conceived to be used in conjunction with other armament that itself is out of use, and it aimed at an enemy – the Soviet bloc – that had ceased to exist. On March 2010, a large majority of the German parliament, the Bundestag, passed a resolution unequivocally demanding the withdrawal of the “US nuclear weapons from German soil.”

But both Steinmeier and Westerwelle failed at convincing the NATO in general, and the US government in particular, to follow. Instead, they had to kowtow before the fait accompli decided in Washington, that the B61 arsenal be modernised to become, to again use Hans Kristensen's aptly description, an “all-in-one nuclear bomb on steroids.” Steinmeier is again foreign minister, but he long ago ceased to discuss the matter in public. He may have “gotten shell-shocked by the pushback from the old nuclear guard in NATO,” as Kristensen said of Westerwelle on the same question. At least, Steinmeier less than two years ago signed a declaration by a group of German parliamentarians representing all political parties, in which they insisted that the US nuclear arsenal be removed from Germany. In the declaration, Steinmeier, at the time leader of the social Democratic parliamentary group, and colleagues accused the then ruling conservative Christian Democratic-Liberal coalition of having failed at reaching the same goal. ...

Source: <http://www.eurasiareview.com/>, March 7, 2014.

NUCLEAR STRATEGY

CHINA

China Fields New Intermediate-Range Nuclear Missile

US intelligence agencies recently confirmed China's development of a new IRBM called the DF-26C, US officials said. The new missile is estimated to have a range of at least 2,200 miles—enough for Chinese military forces to conduct attacks on US military facilities in Guam, a major hub for the Pentagon's shift of US forces to Asia Pacific. As part of the force posture changes, several thousand Marines now based in Okinawa will be moved to Guam as part of the Asia pivot.

The Pentagon announced it is deploying one of its newest anti-missile systems, the THAAD to Guam because of growing missile threats to the US island, located in the South Pacific some 1,600 miles southeast of Japan and 4,000 miles from Hawaii. And on Feb 10, 2014, the Navy announced the deployment of a fourth nuclear attack submarine to Guam, the USS Topeka.

Chinese military officials said the Topeka deployment is part of the Pentagon's Air Sea Battle Concept and posed a threat to China. Disclosure of the new Chinese IRBM follows the announcement early March 2014, by Defense Secretary Chuck Hagel that the US military is sharply reducing its military forces. "How can [US policymakers] possibly justify such reductions in defense spending when American forces as far away as Guam, Korea, and Okinawa are targeted by these nuclear missiles," said one official familiar with reports of the DF-26C. It was the first official confirmation of China's new IRBM, which officials believe is part of the People's Liberation Army military buildup aimed at controlling the Asia Pacific waters and preventing the US military entry to the two island chains along China's coasts.

The first island chain extends from Japan's southern Ryuku Islands southward and east of the Philippines and covers the entire South China Sea. The second island chain stretches more than a thousand miles into the Pacific in an arc from Japan westward and south to western New Guinea. Few details could be

learned about the new missile and a Pentagon spokesman declined to comment, citing a policy of not commenting on intelligence matters. The missile is said to be on a road-mobile chassis and to use solid fuel. The fuel and mobility allow the missile to be hidden in underground facilities and fired on short notice, making it very difficult to counter in a conflict. The DF-26C is expected to be mentioned in the Pentagon's forthcoming annual report on China's military power, which is due to Congress in April, 2014.

... Richard Fisher, a China military affairs specialist, said Chinese reports have discussed a DF-26 missile as a medium-range or intermediate-range system. Medium-range is considered between 621 miles and 1,864 miles. Intermediate-range is between 1,864 and 3,418 miles. Online reports of three new types of medium- and intermediate-range missiles have said the weapons could be multi-role systems

We are in an arms race with China and if America falters, so will our strategic position in Asia, which will surely increase the chances of conflict, nuclear proliferation and even nuclear war." The Pentagon's latest report on China's military forces, published last year, said the PLA is investing in "a series of advanced short- and medium-range conventional ballistic missiles, land-attack and anti-ship cruise missiles, counter-space weapons, and military cyberspace capabilities.

capable of firing nuclear or conventional warheads, along with maneuvering anti-ship and hypersonic warheads, Fisher said. According to Fisher, two likely TEL for the new missiles were displayed last year on Chinese websites. They include two versions from missile TEL manufacturing companies called Sanjiang and Taian.

... The new Chinese long-range missiles also highlight the urgent need for a new US long-range bomber to replace an aging fleet of strategic bombers. To counter the Chinese threats, the United

States should field its force of anti-ship ballistic missiles on submarines to match Chinese capabilities and deter China from using its naval power against US allies such as Japan and the Philippines, Fisher said. Russian officials have cited China's intermediate-range missiles as one reason Moscow is seeking to jettison the US-Russia INF Treaty, which bans medium and intermediate ballistic and cruise missiles. US officials have said Russia is violating the INF treaty with a new cruise missile and testing its long-range missiles to INF ranges. "It is time to retire the INF treaty because the United States now requires this class of missiles in order to deter China," Fisher said.

"The bottom line: We are in an arms race with China and if America falters, so will our strategic position

in Asia, which will surely increase the chances of conflict, nuclear proliferation and even nuclear war." The Pentagon's latest report on China's military forces, published last year, said the PLA is investing in "a series of advanced short- and medium-range conventional ballistic missiles, land-attack and anti-ship cruise missiles, counter-space weapons, and military cyberspace capabilities." The weapons "appear designed to enable anti-access/area-denial (A2/AD) missions, what PLA strategists refer to as 'counter-intervention operations,'" the report said. The new missile is believed by US officials to be the DF-26C. China's military frequently uses the Internet to reveal the first photos of new weapons systems. Analysts said the missile TEL is smaller in size than China's DF-31 ICBM and larger than the DF-21 missile.

Source: <http://freebeacon.com/>, March 3, 2014.

PAKISTAN

Pakistani Leaders to Retain Nuclear-Arms Authority in Crises

A senior official said, Pakistan's top leaders would not delegate advance authority over nuclear arms to unit commanders, even in the event of crisis with India. The revelation might slightly ease global concerns about Pakistani nuclear arms being detonated precipitously in any future combat, though plenty of potential hazards appear to remain. "The smallest to the largest — all weapons are under the central control of the NCA, which is headed by the PM," according to the high-level Pakistani government official, speaking to reporters February 2, 2014 on condition of not being named.

The longtime worry has been that Pakistani military units might be tempted to use battlefield nuclear weapons as a last resort. One possible scenario for such a move might be if Pakistani troops are in danger of being overwhelmed in any future war against India, which has a larger and more capable conventional army. ...The senior Pakistani official acknowledged, though, that ultimately any battlefield use of tactical nuclear arms is left in military hands, as would be the case in virtually any nation's combat operations.

"You must appreciate, in almost all the countries of the world, final operational control lies with the military, even here," the Islamabad official said at the Washington gathering. "But the basic control remains with the civilian leadership, in consultation with the military commanders. And the usage will be controlled at the highest level, even if the smallest device in the smallest numbers has to be used." The official noted that Pakistan's nuclear arsenal "is primarily a deterrence mechanism," and "the usage is a secondary thing." The South Asian nation "is not very anxious" to use nuclear arms, but Pakistan sees the arsenal as necessary in "an imbalanced military relationship with our neighbors."

The senior figure was asked if Pakistani military unit commanders — once given emergency authority to detonate nuclear weapons — might set off the deadly devices rather than allow potentially dominant Indian troops to overrun and steal them. "I think principally I should take offense to this remark," the official said. "We are not so naïve to handle nuclear weapons, to hand them over to a conventional army coming to our borders. ... There are no chances of that." Rather, "if we can develop it, I'm sure we can look after it, also," the senior official said, referring to the high caliber of both the nuclear technologies and the Pakistani troops whose dedicated mission is to secure the atomic arms. Pakistani military commanders, the official said,

The basic control remains with the civilian leadership, in consultation with the military commanders. And the usage will be controlled at the highest level, even if the smallest device in the smallest numbers has to be used." The official noted that Pakistan's nuclear arsenal "is primarily a deterrence mechanism," and "the usage is a secondary thing." The South Asian nation "is not very anxious" to use nuclear arms, but Pakistan sees the arsenal as necessary in "an imbalanced military relationship with our neighbors."

"would rather commit suicide than let this fall in somebody else's hands who's not supposed to have it." ...

Source: <http://www.awaztoday.com/>, March 1, 2014.

RUSSIA

Obama Administration Ignores Russian Nuclear Violations

Russia is covertly developing and testing nuclear missiles in violation of the 1987 INF Treaty and the Obama administration to date has failed to hold Moscow accountable, according to arms control specialists. "The Russians have basically violated

every major treaty they've ever entered into, certainly every major weapons treaty," said Sen. Marco Rubio, a member of the Senate Foreign Relations and Intelligence Committees....

...The *Free Beacon* first reported in October, 2013 that a Russian test of a new missile, the RS-26, violated the INF treaty. The accord prohibits ballistic missiles with ranges of 5,500 kilometers (3,415 miles) or less, and cruise missiles with ranges less than 500 kilometers (310 miles). In January, 2014, the *New York Times* reported that the Obama administration notified NATO allies that Russia's new R-500 cruise missiles violated the accord. State Department spokeswoman Jen Psaki later confirmed the potential treaty violation was raised in talks with the Russians.

On Feb 6, 2014 three House committee chairman—Rep. Howard P. "Buck" McKeon (R., Calif.), Rep. Ed Royce (R., Calif.), and Rep. Mike Rogers (R., Mich.)—stated in a letter to the president that there is "compelling evidence" Moscow is "in material breach and circumvention" of the INF treaty. Rubio said State Department officials have dismissed the Russian treaty violations by saying that continuing to hold arms talks with Moscow is more important and a sign of progress in often-chilly US-Russian relations. He also added, "And I think that's a very dangerous worldview."

The Obama administration has failed to address the treaty violations and also did not notify US allies until news of the breach was about to be made public, Rubio said. The lapse undermined US reliability and credibility with its allies. Rubio said he is very worried about the national security impact of the reported INF violations and the administration's failure to regard them seriously, adding that US allies in Europe increasingly view the United States as an unreliable partner.... Rubio said, "One of the areas that we continue to focus on is the argument that we should not be entering any more negotiations with the Russians on any weapons systems so long as they are openly violating ... habitually violating multiple different agreements." He added that the treaty breaches are discussed openly in Russian state-run news reports.

Earlier, Mark Schneider, a former senior Pentagon official, said the evidence of multiple Russian INF violations is "compelling" and includes official Russian statements. Schneider said Russia appears engaged in five INF breaches including the R-500 ground-launched cruise missile, also called the

Iskander K, which has a range over 600 miles, and testing the RS-26 intercontinental missile to INF ranges. ...

The noncompliance problems are made worse by what Schneider called the administration's "very weak compliance policy." We knew about this cruise missile in late 2011 and didn't raise it with the Russians until May 2013," he said, noting that the annual State Department arms compliance report also omitted the violation. Schneider said the Russian missiles represent a "quite considerable capability that should not exist" because of the INF treaty. "You really can't divorce arms control from compliance," he said.

... Asked about the INF compliance by Moscow, a State Department official told the *Free Beacon*: "The administration does have concerns about Russian compliance with the INF treaty. We have raised these concerns with Russia and are pressing for clear answers in an effort to resolve our concerns." The official said the issue would not be dropped "until our concerns have been addressed." A Russian defense adviser said in Moscow February 25, 2014 that US claims of Russian INF violations are being addressed in diplomatic channels. The adviser, retired Strategic Forces commander Col. Gen. Victor Yesin, was asked about recent US reports that Russia had tested a new long-range cruise missile, according to the state-run Interfax news agency. Yesin, an adviser to the defense ministry, said he was not familiar with the missile but noted that Russia's foreign ministry is working on the issue with the United States.

Source: <http://freebeacon.com/>, February 26, 2014.

Russia Test-Fires ICBM Amid Tension Over Ukraine

Russia said it had successfully test-fired an ICBM on March 4, 2014, with tensions running high over its military intervention in Ukraine's Crimea region. A US official said the United States had received proper notification from Russia ahead of the test and that the initial notification pre-dated the crisis in Crimea. The Russian Defence Ministry could not be reached for comment.

The Strategic Rocket Forces launched an RS-12M Topol missile from the southerly Astrakhan region and the dummy warhead hit its target at a proving ground in Kazakhstan.... The launch site, Kapustin Yar, is near the Volga River about 450 km east of the Ukrainian border. Kazakhstan, a Russian ally in a post-Soviet security grouping, is further to the east.

Russia conducts test launches of its ICBMs fairly frequently and often announces the results, a practice seen as intended to remind the West of Moscow's nuclear might and reassure Russians that President Vladimir Putin will protect them.

... Putin has emphasised that Russia must maintain a strong nuclear deterrent, in part because of an anti-missile shield the US is building in Europe which Moscow says could undermine its security. The Defence Ministry said the test could help Russia improve its capability of foiling anti-missile shields.... Moscow says it is concerned US interceptors could shoot down some of its ICBMs in flight, weakening its arsenal. The US says the shield is meant to protect against threats from states such as Iran and poses no threat to Russia. The 20-metre (60-foot) long RS-12M, known in NATO parlance as the SS-25 Sickle, was first put into service in 1985 and is designed to carry a nuclear warhead. Its range is 10,500 km.

Source: <http://news.yahoo.com/>, March 4, 2014.

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devastation by the March 2011 earthquake and tsunami.

But many experts and industry officials say the experience and technology such as robotics being developed can be used in any decommissioning in the future. That could represent new opportunities for Japan Inc., which has lost some of its global clout to competitors from countries such as South Korea, China and the US "There is decommissioning business here beyond Fukushima and it's a worldwide business," said Lake Barrett, a former US nuclear regulator who headed the Three Mile Island cleanup. "I think it's an exciting new area," he said.

"Japan can be a world leader again." Japan's government hopes an offshoot will a boom in the country's nuclear technology exports.

... Tokyo Electric Power Co. is setting up a separate company in April to clean up the plant. Tentatively called the Decommissioning Company, it is overseen by the government's economic ministry and could evolve into a decommissioning organization for other plants at home and abroad. Academics, construction giants, electronics makers and risk management firms are rushing to get on the bus.

Japan also created the government-funded International Research Institute for Nuclear Decommissioning in 2013. It brings together nuclear

plant operators, construction companies and organizations of nuclear experts to promote research and development of nuclear decommissioning technologies, as well as cooperation between international and domestic organizations. IRID has received 780 proposals for funding from around the world for ideas and technologies related to the treatment and management of contaminated water, as well as 220 others about retrieving the three melted cores. Japanese companies including Toshiba Corp., Mitsubishi Heavy Industries and Hitachi have been developing robots that can

NUCLEAR ENERGY

JAPAN

Nuclear Officials See Future Business in Fukushima Decommissioning

There is something surprising in the radioactive wreck that is the Fukushima Dai-ichi nuclear power plant: opportunity. To clean it up, Japan will have to develop technology and expertise that any nation with a nuclear reactor will one day need. Eyeing dozens of aging reactors at home and hundreds of others worldwide that eventually need to be retired, Japanese industry sees a profitable market for decommissioning expertise. It may sound surprising, given all the ongoing problems with the coastal Fukushima Dai-ichi plant, including massive leaks of contaminated water and other mishaps that followed its

Japanese companies including Toshiba Corp., Mitsubishi Heavy Industries and Hitachi have been developing robots that can monitor radiation, decontaminate, remove contaminated debris or repair damage, and some of them have been mobilized at the plant. Standard decommissioning has been largely carried out by human workers. IRID Managing Director Kazuhiro Suzuki said the robotics technologies being developed to probe and remove Fukushima's melted fuel could benefit ordinary decommissioning, not just severely damaged reactors.

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... Experts in Japan are eyeing a British model, the National Decommissioning Agency, founded in 2005 to be in charge of decommissioning and cleanup of nuclear plants and radioactive waste management. TEPCO is decommissioning four reactor units crippled by the 2011 earthquake and tsunami, and will later scrap the remaining two that survived. Three suffered meltdowns and one was damaged by hydrogen explosions. The decommissioning of the four would take about 40 years. The total cleanup cost for the severely damaged Fukushima reactors could be as high as 10 times a standard decommissioning that normally costs about 70 billion yen (\$700 million) per reactor, Suzuki said.

Having completed decommissioning of 10 regular reactors and the Three Mile Island cleanup, the US government and nuclear industry see a profitable market too. In February, representatives of 26 American companies came to Tokyo for presentation and business talks with 50 Japanese companies during a two-day decommissioning and remediation forum, co-sponsored by the governments of Japan and the US "We can work together and do so much more," said Austin Auger, an executive at CB&I, which worked with Toshiba to assemble one of the earliest treatment units for contaminated water at Fukushima.

Source: <http://www.startribune.com/>, March 8, 2014.

TAIWAN

Taiwan Signals More Nuclear Power Despite Protests

Waves of demonstrators have turned out in Taiwan to call for an end to nuclear power, while the island's government says it needs nuclear energy to supply power and will start up a fourth plant once it passes safety checks. Some 130,000 protesters around Taiwan took to rainy streets on Saturday to call for the closure of three aging nuclear power plants and

the decommissioning of a fourth that has not started operations. Their appeal to public safety ... was met with a government response signaling that nuclear power will go ahead for now.

Lin Hung-chih, deputy secretary general of the ruling Nationalist Party's Central Policy Committee, said the island's nuclear program is safe. He said that Taiwan's first, second and third nuclear plants, compared internationally, rank among the top and could not cause problems as they have been operating for so long. As for the safety of the fourth plant, he said that in addition to a ministry of economic affairs inspection, Taiwan's Atomic Energy Commission will continuously make checks. An international organization will perform safety tests as well. Taiwan has a large industrial base, and cabinet spokesman Sun Lih-chyun said nuclear energy must continue for now. He said that the unfinished No. 4 plant could start up once its safety is assured. Construction began in 1999 and has cost \$9.3 billion, due in part to delays sparked by popular opposition.

Some of Taiwan's biggest demonstrations have been held since the March 11, 2011 nuclear catastrophe in Japan following an earthquake. Officials reacted in the past by saying they hope to eventually scrap nuclear power and that voters could decide whether to go ahead with the fourth plant. There is no timeline for scaling back nuclear power however, and hopes for a nuclear power referendum dimmed last year because of legal barriers....

Source: Ralph Jennings, Voice of America, March 10, 2014.

UKRAINE

Ukraine Reactor Operate Through Turmoil

Ukraine has 15 nuclear power reactors at four sites (Khmelnitsky, Rovno, South Ukraine and Zaporozhe), all operated by Energoatom. All the units are Russian VVER types, two being 440 MWe models and the rest larger 1000 MWe units. Between them, the plants provide almost half of the country's electricity. According Ukraine's SNRI, 12 of the country's nuclear power reactors are currently in operation, while three are in planned maintenance and refuelling outages. Energoatom said that its nuclear plants are operating "in normal mode," though physical security at the plants had been stepped up by both its own security staff and by military units of the interior ministry.

Fuel Supplies: *Energoatom* noted that the fuel supply for its reactors has been secured for the "near future" and that it expects existing fuel supply contracts to be fulfilled. Dmitry Rogozin, Russian deputy PM, was cited by Interfax as saying, "The Ukrainian nuclear power plants have fuel reserves for March and April." According to an RIA Novosti report, Russian nuclear fuel manufacturer TVEL has already received advanced payments for four batches of nuclear fuel scheduled to be delivered to Ukrainian plants over the coming months. However deliveries may be disrupted as a result of a ban that was imposed on the transportation of nuclear fuel across Ukraine. This ban, however, was reportedly lifted by SNRI on 6 March.

Russia to Fulfil European Contracts: TVEL said that it aims to provide uninterrupted supply of fuel for other European nuclear power reactors. The company said that, despite the ban on shipments through Ukraine, it will use alternative routes and different shipping methods, such as air transport, to fulfil its contractual obligations.

Russia's state nuclear corporation Rosatom was cited by *Interfax* as saying that a shipment of fuel to a Slovakian nuclear power plant will be made by air The Rosatom subsidiary provides fuel for Russian-supplied plants in Bulgaria, Hungary and Slovakia. The executive director of Bulgaria's Kozloduy nuclear power plant Ivan Genov has stated, "Events in Ukraine will not affect in any way either supplies of fresh fuel to Kozloduy or shipment of spent fuel." ... However, Genov noted that the two operating units at Kozloduy can operate until early 2015 using available fuel stocks.

A fuel cycle plant is currently under construction near the village of Smoline in central Ukraine as a joint venture between TVEL and the Ukrainian state nuclear fuel company. The plant will produce fuel for VVER-1000 reactors. It is being built in two stages, with the first stage, capable of producing up to 800 fuel assemblies per year, completed in 2015. Construction is planned to begin on a second stage in 2016, for completion in 2020.

Source: <http://www.world-nuclear-news.org/>, March 6, 2014.

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USA

US Regulator Asks for USD 3.6 Billion Budget Increase for 2015

The US NRC has requested a budget of 1.05 billion USD (772 million euros) for 2015 to regulate nuclear power plants and users of nuclear materials, the NRC said in a statement. The budget represents an increase of USD 3.6 billion over the budget that was enacted for 2014, the statement said. However, because the fees the NRC charges the licensee are sent directly to the US Treasury, the net appropriation for the NRC is USD 124 million, which is USD one million less than in 2014. The requested budget includes USD 815 million for nuclear reactor safety and USD 232 million for nuclear materials and waste. The budget also includes resources to continue activities related to the lessons learned from the March 2011

Fukushima-Daiichi accident, including re-evaluations of seismic and flooding protection measures. The budget includes USD 12 million for the Office of the Inspector General, an independent body which carries out investigations and audits of the NRC's programmes and promotes cost-effective management.

Source: <http://www.nucnet.org/>, March 6, 2014.

BALLISTIC MISSILE DEFENCE

USA

Raytheon Awarded Contract for Patriot

Raytheon has received a \$655 million contract for new-production fire units of the combat-proven Patriot Air and Missile Defense System for Kuwait. These units are an addition to the Patriot fire units Kuwait currently owns to counter current and evolving threats. Awarded by the US Army Aviation and Missile Command, Redstone Arsenal, Ala., as a FMS agreement, the contract includes new Patriot fire units with increased computing power and radar processing efficiency, improved man-machine interface and reduced life-cycle costs. ... "Kuwait is part of Patriot's current family of 12 nations that have already selected Patriot as the cornerstone of their air and missile defense strategy. Their decision to further strengthen their defenses with

technologically advanced new production fire units reaffirms our strong partnership and their trust in Patriot to protect Kuwait's people and critical infrastructure." Work under this contract will be performed at Raytheon's Integrated Air Defense Center, Andover, Mass., supported by a global team of Patriot system suppliers.

Source: <http://www.spacedaily.com/>, March 5, 2014.

NUCLEAR COOPERATION

China-South Africa

China Shows Interest in South Africa's Nuclear Plans

Energy Minister Ben Martins and the vice administrator of China's National Energy Commission, Tan Rongyao, met in Cape Town on March 4, 2014, to discuss China's interest in participating in South Africa's nuclear energy projects. According to a joint statement released by Martins and Tan, China has proposed an agreement, still under consideration by both parties, which covers the supply of nuclear energy products, infrastructure funding, supplier development and localisation, skills development, and research and development. In 2006, South Africa and China signed an inter-governmental agreement on cooperation in the peaceful use of atomic energy, covering design, construction and operation of nuclear reactors. The two countries followed this up in 2010 with the signing of a general cooperation agreement in energy, covering oil and gas, renewable energy, energy efficiency and skills development.

"Since the signing of these agreements, the two countries have continued to exchange information and knowledge," the joint statement read. "China has started training South Africans in the renewable energy sector, and there are plans to expand this to include capacity building in the nuclear energy sector." Tan, accompanied by a high-level delegation, participated in the South Africa-China Nuclear Energy Cooperation Seminar in Johannesburg. On the second day of the seminar, the Nuclear Energy Corporation of South Africa (Necsa) signed a skills development and training agreement with two

Chinese state nuclear energy corporations, the China General Nuclear Power Corporation and the State Nuclear Power Technology Corporation.

The agreement will create opportunities for young South Africans to further their studies in nuclear energy and other specialised areas of energy at Chinese universities, with funding of up to 95% from Chinese institutions. Martins said Tan's visit, and the hosting of the seminar in South Africa, demonstrated China's confidence in the potential of South Africa's energy sector....

Source: <http://www.southafrica.info/news/>, March 5, 2014.

INDIA-FRANCE

India, France Agree on Cost of Power Generated by Jaitapur Nuclear Power Plant

After three years of hectic negotiations, India and France have agreed on the cost of power that will be generated by Jaitapur Nuclear Power Plant (JNPP), clearing a major hurdle in the path of the project. The two sides have agreed on Rs 6 per unit, down from Rs 9.18 per unit quoted by the French company Areva initially, which was not acceptable to India, sources told PTI here.

France has also decided to provide India a loan for the project at 4.8 per cent interest rate for 25 years, they said. The decisions were arrived at during a meeting between National Security Advisor Shivshankar Menon and Chairman of France's Commission on Atomic Energy and Alternative Energies (CEA) Benard Bigot in Paris recently, they said. The NPCIL and Areva are now working out further modalities.

The Jaitapur project in Ratnagiri district of Maharashtra will have 6 EPRs with each reactor producing 1650 MWs of electricity. The cost of power was a major

hurdle in the forward movement on JNPP with the two sides differing on it earlier. Areva, which was building the reactors for JNPP, had quoted the price of Rs 9.18 per unit. This was strongly opposed by the DAE and NPCIL. DAE secretary R K Sinha had also told reporters in December last year that the minimum price India could zero down to was Rs 6-

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6.50 per unit. However, France now has agreed to bring down the price to Rs 6. JNPP would be one of the costliest nuclear power plant projects considering its sheer size and the new technology. French officials say the reactors are expensive because of enhanced safety measures.

Source: The Economic Times, March 9, 2014.

IRAN–RUSSIA

Iran, Russia Stress Nuclear Energy Cooperation

Iran and Russia have highlighted the necessity of continuing bilateral cooperation in the field of peaceful use of nuclear energy. On Thursday, Deputy Director of the Atomic Energy Organization of Iran (AEOI) Mohammad Ahmadian and Sergei Kiriyyenko, director general of Russia's nuclear energy corporation Rosatom, sat down for talks in Moscow, IRNA reported. During the meeting the two sides expressed satisfaction with the progress and launching of the first unit of Iran's nuclear power plant in Bushehr. Iran's Ambassador to Moscow Mehdi Sanaei was also present at the meeting. ... In an interview with Press TV on February 3, AEOI Director Ali Akbar Salehi said the Islamic Republic is in talks with Russia for the construction of new nuclear power plants to produce 4,000 megawatts of electricity.

Source: <http://en.trend.az/regions/iran/2250221.html>, March 7, 2014.

RUSSIA–FINLAND

Russia, Finland Agree on More Cooperation

Russia and Finland have signed a new intergovernmental agreement on nuclear energy cooperation - a prerequisite for Russia to supply a reactor unit for Fennovoima's Hanhikivi project. The agreement was signed in Helsinki yesterday by Finnish economy minister Jan Vapaavuori and head of Russia's state nuclear corporation Rosatom Sergey Kiriyyenko. Through the agreement, Finland and Russia will cooperate in areas including nuclear energy research, reactors and their use in energy production, nuclear safety, radiation protection and environmental protection.

A key feature of the new agreement is that it resolves issues related to liability for damages from nuclear accidents. Finland is party to the OECD-sponsored Paris Convention on nuclear liability,

while Russia adheres to the IAEA-sponsored Vienna Convention. The new accord stipulates that both international treaties are reciprocally applicable between Finland and Russia. Finland's Ministry of Employment and the Economy (TEM) noted, "In practice, therefore, the agreement thus substitutes for the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention, which Russia has not ratified."

The ministry said that the previous cooperation agreement with Russia expired in 2004 and that nuclear collaboration between the two countries since then "has taken place without a legal treaty framework." Under earlier cooperation between the

two countries, two VVER-440 units were constructed at Fortum's Loviisa plant in southern Finland. These were, however, supplied with Western containment and control systems. ... Fennovoima signed the plant supply contract for Hanhikivi with Rusatom Overseas - Rosatom's subsidiary concerned with exports of

nuclear power plants - in December 2013. Rosatom has offered to build a plant using a Gidropress-designed AES-2006 VVER that would produce 1200 MWe. Rosatom has agreed to take a stake of 34% in the project, the major share previously held by Germany's EOn, and support the project by arranging debt finance for the plant's construction.

... Finnish mining company Talvivaara has said that while it supports the Fennovoima project, it is not yet ready to commit to it financially. However, steel company Outokumpu has announced plans to increase its stake in the project to 12.5%. Rosatom has also reportedly said it wants to increase its stake in the project, from 34% to 49%. ... A revised EIA for its proposed plant, based on the AES-2006, was recently submitted to TEM. Although the Finnish government issued a decision-in-principle in favour of a new plant there in 2010, it was based on Fennovoima's initial plans for an 1800 MWe plant using either an Areva EPR or Toshiba ABWR. A final ministerial statement is scheduled to be issued in June. Assuming a positive investment decision, it will apply for construction permits by mid-2015. According to the target schedule, the plant will start producing electricity in 2024.

Source: WNN, February 26, 2014.

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NUCLEAR DISARMAMENT

AUSTRALIA

Federal Government Worked to Scuttle New Zealand Statement Against Nuclear Weapons

The federal government led secret diplomatic efforts to frustrate a New Zealand-led push for nuclear disarmament, according to documents released under freedom of information laws. Declassified ministerial submissions, cables and emails from the Department of Foreign Affairs and Trade show Australian diplomats worked energetically against nuclear disarmament efforts by other countries, because "we rely on US nuclear forces to deter nuclear attack on Australia". In October, 2013, following the election of the Coalition government, Australia refused a New Zealand request to endorse a 125-nation joint statement at the UN highlighting the humanitarian consequences of any use of nuclear weapons.

Australia objected to a sentence declaring that it is in the interest of humanity that nuclear weapons are never used again, "under any circumstances". A group of 16 nations, including Indonesia, Malaysia, Mexico, South Africa and New Zealand have been working to highlight the humanitarian effects of nuclear weapons. This diplomatic campaign is intended to lay the ground for negotiation of a convention that would prohibit nuclear weapons -

A group of 16 nations, including Indonesia, Malaysia, Mexico, South Africa and New Zealand have been working to highlight the humanitarian effects of nuclear weapons. This diplomatic campaign is intended to lay the ground for negotiation of a convention that would prohibit nuclear weapons - putting them in the same category as chemical and biological weapons which are already prohibited under international law.

- putting them in the same category as chemical and biological weapons which are already prohibited under international law. Foreign Affairs Minister Julie Bishop argues this approach is simply counterproductive. "[The] argument 'to ban the bomb' may be emotionally appealing, but the reality is that disarmament cannot be imposed this way," she said in February 2014. "Just pushing for a ban would divert attention from the sustained, practical steps needed for effective disarmament."

However, declassified documents have revealed the government's primary concern is that a nuclear weapons ban would "cut across" Australia's reliance on US nuclear deterrence as part of its defence posture. A Foreign Affairs and Trade department submission endorsed by Ms Bishop last October

argued that a nuclear weapons ban "conflicts with Australia's long-standing position that, as long as a nuclear weapons threat exists, we rely on US nuclear forces to deter nuclear attack on Australia". Foreign Affairs and Trade head Peter Varghese bluntly observed that the New Zealand-led humanitarian initiative "runs against our security interests". Australia's diplomacy suffered a blow when Japanese Foreign Minister Fumio Kishida agreed that Japan would sign the New Zealand-led statement. Australian diplomats consulted closely with the US State Department. Email exchanges between Australian diplomats reveal Washington reprimanded Tokyo over its decision. ...

Source: <http://www.smh.com.au/>, March 10, 2014.

IRAN

Iran Stopped Nuclear Weapons Program as Sinful

Iran abandoned its military nuclear program because owning nukes is a sin, the Iranian president Hassan Rouhani revealed in an interview. Ayatollah Ali Khamenei formalized the ban with a religious decree forbidding nuclear weapons. It is not only international treaties prohibiting proliferation of nuclear weapons that made Tehran change its mind and put an end to the national military nuclear programme, Iranian President Hassan Rouhani told Defense Ministry officials on March 1, 2014. Apart from being "useless, harmful and dangerous",

the very possession of nuclear weapons is a sin, said Rouhani, reiterating the country's Supreme Leader Ayatollah Ali Khamenei, who had issued a religious decree banning development and use of nuclear weapons. "We are not after weapons of mass destruction. That's our red line," Rouhani said.

"Would Iran be after weapons of mass destruction, it would rather develop chemical or biological weapons which are easier to make," the Iranian president said. As a signatory to the UN's NPT Iran will remain committed to its obligations not to build nuclear weapons, but will not compromise on its right to enrich uranium and produce nuclear fuel for power generation, as well as producing radioisotopes to treat cancer patients, Rouhani stressed. "We signed these treaties to show the world

we are not after such weapons," the President told military commanders. *"Even if there were no NPT or other treaties, our belief, our faith, our religion and principles tell us not to seek weapons of mass destruction,"* assured the Iranian leader. The policy of moderation and easing tensions with the outside world taken by the government led by Hassan Rouhani elected president last year is *"not a tactic"* but a genuine change in the Islamic Republic's foreign policy. ...

Source: <http://rt.com/>, March 1, 2014.

NUCLEAR NON-PROLIFERATION

JAPAN

The United States and China disagreed over Japan's plutonium stocks at a UN nuclear agency meeting on March 5, 2014, with Washington saying it did not share Beijing's concern about the sensitive issue, diplomats said. China expressed concern about the size of Japan's plutonium holdings at a board session of the IAEA, diplomats who attended closed-door discussions at the U.N. body said. Russia voiced similar views, they said.

Like uranium, plutonium can be used to fuel nuclear power plants, but can also provide material for nuclear bombs. The US ambassador to the IAEA made clear his country was not worried about Japan's treatment of the material. "We are not at all concerned that the plutonium is either being handled improperly or that there isn't a plan for disposition," Ambassador Joseph Macmanus told reporters. He later told the board, according to one diplomat, that "we do not share the concerns expressed" by China in February, 2014.

On Feb 17, 2014, Beijing said it was "extremely concerned" by a report that Japan has resisted returning to the United States more than 300 kg (660 lb) of mostly weapons-grade plutonium. Japan's Kyodo news agency said the United States had pressed Japan to give back the nuclear material, which could be used to make up to 50 nuclear bombs. Japan had balked, but finally given in to US demands, Kyodo said. The material was bought for research purposes during the 1960s and the two governments will probably reach an official agreement on its return at the Nuclear Security Summit in The Hague

Japan has plutonium contained in spent nuclear fuel at civil reactor and reprocessing sites, totaling 159 metric tons at the end of 2012.

in March, an official at Japan's Education Ministry said. Nuclear-armed China is involved in a bitter territorial dispute with Japan. It denies Japanese accusations that it is a threat to peace and in turn has accused Japan of trying to rearm and failing to learn the lessons of its brutal behavior during World War Two, when Japanese forces occupied China.

No IAEA Concern Either: ... Japan has plutonium contained in spent nuclear fuel at civil reactor and reprocessing sites, totaling 159 metric tons at the end of 2012, according to Japanese data posted on the IAEA website. Macmanus said "plutonium and the disposition of plutonium stocks" was a central element of what he called a very successful diplomatic and energy partnership with Japan. He also said, "We are satisfied that Japan understands what the conditions are for the use and the maintenance of those stocks and we are not concerned." In his statement to the board, he was quoted as saying that one goal of a US-Japan nuclear security working group was to reduce quantities of weapons-usable nuclear material in Japan, and that this cooperation has been "successfully ongoing for decades". He said Japan had been "consistently" transparent about its plutonium inventory. IAEA Director General Yukiya

Amano also said there was no reason for concern that plutonium held by Japan could be diverted for nuclear arms purposes.

Source: <http://www.chicagotribune.com/>, March 5, 2014.

NUCLEAR PROLIFERATION

IRAN

'No Guarantee' of Final Nuclear Deal With Iran, EU Official Says

The European Union's foreign policy chief, Catherine Ashton, said Sunday that there was "no guarantee" that Iran and world powers would be able to reach a final, comprehensive agreement over Iran's nuclear program. Ms. Ashton, who talked with Iranian leaders in Tehran, represents the permanent members of the United Nations Security Council plus Germany, known as the P5-plus-1 group, which reached an interim agreement with Iran in

November to limit its nuclear program. It was a breakthrough after more than a decade of talks.

The six-month, renewable agreement obliged Iran to stop enriching uranium to high levels and to reduce its stockpile of near-weapons-grade uranium. In return, some economic sanctions were lifted, including access to \$4.2 billion in Iranian cash frozen in foreign banks. But Ms. Ashton tried to temper optimism about a final deal.

Speaking to air force commanders in Tehran on Thursday, Ayatollah Ali Khomeini said "This interim agreement is really important, but not as important as a comprehensive agreement," Ms. Ashton said at a joint news conference with Iran's foreign minister, Mohammad Javad Zarif. Because of the "difficult" and "challenging" nature of the process, however, "there is no guarantee that we will succeed," she added. Mr. Zarif, who has faced pressure from Iranian hard-liners who accuse him of selling out the country's nuclear program, emphasized that his negotiators would agree only to a deal that respected Iran's "rights," a reference to the nation's ability to enrich uranium independently on its own soil. ...

Source: Thomas Erdbrink, <http://www.nytimes.com>, March 9, 2014.

US: Iran Must Clear Up Nuclear Arms Suspicions

A US envoy, Joseph Macmanus, told Iran on March 5, 2014 that it can expect substantial relief from sanctions choking its economy only if it clears up suspicions that it worked on nuclear arms. But Tehran said claims that it did so are "baseless." The exchange reflected the obstacles remaining to a full nuclear agreement with Iran that would put to rest concerns that Tehran may be interested in atomic arms. Iran and six world powers are now working on a comprehensive deal that highlights sanctions relief in exchange for an agreement by Tehran to substantially scale back nuclear programs that could be turned toward making a bomb.

On March 5, 2014, the envoy told the IAEA's 35-nation board that clearing up suspicions that Iran worked on nuclear arms "will be critical" to any final accord meant to give Tehran full final sanctions relief. Tehran denies wanting — or working on — such

weapons, and Iranian IAEA delegate Reza Najafi said on March 5, 2014, that his country does "not recognize" the allegations.

Source: <http://cnsnews.com/>, March 5, 2014.

US Faces Israeli, Saudi Concerns Over Iran Nuclear Talks

President Obama's push to limit Iran's nuclear program includes a promise to Israel and Saudi Arabia that he will not allow Tehran to develop nuclear weapons. But Israeli PM Benjamin Netanyahu says Israel will never be secure if Iran continues to enrich uranium. In their meeting at the White House in March 2014, Obama told the PM that his commitment to blocking Iran from atomic weapons is absolute.

But US officials involved in talks on Iran's nuclear program say there is general agreement that Iran will ultimately be allowed to continue enriching some uranium for civilian research at levels far below weapons-grade. Netanyahu said "that would

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be a grave error." "It would leave Iran as a threshold nuclear power," he said. "It would enable Iran to rapidly develop nuclear weapons at a time when the world's attention is focused elsewhere."

Iranian Foreign Minister Mohammad Javad Zarif says his country has never sought nuclear weapons. "There was first a perception that this was nothing but a façade for a weapons program and an illusion that it could be brought to an end

through pressure and intimidation," he said. With Israeli defense officials vowing to intercept any possible threat on any day in any place, former US ambassador Adam Ereli says Washington's promises on Iran only go so far. He said, "Obviously Israel is the most directly concerned of all the parties by Iran's nuclear program because it represents a very real, very direct threat to Israel." US Secretary of State John Kerry says attacking Iran does not guarantee security.

"Those who say strike and hit need to go look at what happens after you've done that," he said. "Whether that permanently eliminates the program or opens up all kinds of other possibilities including Iran leaving the nuclear proliferation treaty, not even

allowing IAEA inspectors in, not living under any international regimen." It is part of Washington's new approach to Iran, says American University professor Hillary Mann Leverett. "Kerry has long been open to, long looked for a way of conflict resolution in the Middle East that would include, not exclude the Iranians," she said.

Despite objections from long-time US allies Israel and Saudi Arabia. Mann Leverett says, "The United States is going to have to say: 'Yes you are our allies but you cannot stand in the way of critical US interests.' Just as when Nixon went to China we kept Japan and Taiwan as allies but we didn't let them stand in the way of the biggest geopolitical prize of the century: going to China. The same thing has to happen with Iran." Promising to lead the push for tougher action if Iranian nuclear talks fail, Obama follows up his White House meeting with the Israeli leader with a trip to Riyadh later in March, 2014 for talks with Saudi King Abdullah.

Source: <http://www.turkishweekly.net/>, March 7, 2014.

NUCLEAR SAFETY

EUROPE

Europe's Nuclear Industry Headed for Safety Concerns

Greenpeace is demanding immediate action to protect the bloc's citizens from a rising risk of nuclear accidents. The environmental NGO has found out that many nuclear power plants in Europe are too old.

Environmental organization Greenpeace says that the risk of a nuclear accident in Europe is on the rise. A new 146 page report, commissioned by the organization, finds that risk levels in Europe's nuclear facilities are rising due to various reasons. The document cites the ongoing use of nuclear power plants beyond their original used-by date, as well as increased power demands in the bloc, as the main problems.

Currently in the European Union, Switzerland and the Ukraine there are 151 nuclear power plants in operation. Of those, 66 were built over 30 years ago and 25 of them were built over 35 years ago. "If you consider that most of the reactors were planned to run for 30 years, then it's clear that many of them

are now exceeding their life span," explains Greenpeace nuclear expert Tobias Riedel. The problem with old power plants is not just that the component parts are getting more worn, say the experts. It's also because of the lower technical and security requirements of the older power plants...

Source: <http://nuclear-news.net/>, March 7, 2014.

GERMANY

Germany Ups Safety Plans for Nuclear Power Plants

The German government has proposed a dramatic increase in safety measures for areas surrounding nuclear power plants. ... Germany's 16 federal states are responsible for nuclear security, but the government in Berlin has now made recommendations which are based on a report by the country's independent watchdog, the commission for protection against radiation.

Germany's 16 federal states are responsible for nuclear security, but the government in Berlin has now made recommendations which are based on a report by the country's independent watchdog, the commission for protection against radiation. These include an expansion from two to five kilometers (three miles) of the "security radius" that would be evacuated in case of a serious accident in a nuclear power plant. It also suggests a doubling from 10 to 20 kilometers of the area from which people would have to be evacuated within 24 hours of an accident.

These include an expansion from two to five kilometers (three miles) of the "security radius" that would be evacuated in case of a serious accident in a nuclear power plant. It also suggests a doubling from 10 to 20 kilometers of the area from which people would have to be evacuated within 24 hours of an accident. The nuclear commission was set up to review nuclear security procedures in Germany in the wake of the Fukushima catastrophe. The proposals also include distributing iodine tablets to the population in a radius of 100 kilometers around the site of the accident - and to children and pregnant women

throughout the entire country. ...

Source: <http://www.dw.de/germany-ups-safety-plans-for-nuclear-power-plants/a-17486512>, March 10, 2014.

TAIWAN

Deputy Economic Affairs Minister Woody Tyzz-jiun Duh said on March 5, 2014 that 93 of 96 safety items at the first, second and third nuclear power plants currently in operation have now been reinforced and that all should be completed by February 2015. The fourth nuclear power plant, which is still under construction, needs to have 67 items reinforced, 56

of which have already been completed. Full completion is scheduled for February 2016.

Duh made the remarks to a legislative committee in a report on the progress of the safety reinforcement measures. The MOEA asked Taiwan Power Co., the operator of the country's nuclear power plants, to make a comprehensive examination of the plants in terms of design, equipment protection and contingency measures in the wake of Japan's Fukushima nuclear power plant disaster that occurred as a result of the March 11, 2011 earthquake and tsunami. The MOEA expressed confidence on March 3, 2014 that the safety tests and checks being done on fourth nuclear power plant project in northern Taiwan will be completed by the end of June, 2014 as scheduled.

A 45-member special safety inspection team began its review of 126 systems at the country's fourth nuclear power plant, which is still under construction, in May 2013. As of March 2, 2014, 104 systems had been re-checked and passed tests, the MOEA said. Improvements were ordered on another 17 systems and another five systems had yet to be delivered and have not undergone safety tests, the MOEA said in a statement. The double checks and tests will likely be completed by the end of June, an MOEA official said after a regular meeting of an expert committee tasked to review the safety inspection team's work. The MOEA will also deliver all the relevant documents and safety reports to the nuclear safety regulator, the Atomic Energy Council, by the end of September, 2014 for review, the official added.

Source: <http://www.chinapost.com.tw/>, March 6, 2014.

NUCLEAR TERRORISM

PAKISTAN

Internal Security Faces Nuclear Terrorism Threat: NISP

The document of NISP 2014-2018 putting a question mark on the capacity of existing NISA has revealed that country's internal security is also facing threat of nuclear terrorism, besides other traditional and non-traditional threats. The 94-page document says

This threat of nuclear terrorism is addition to the possibility of use of chemical and biological substances by the terrorists described by the policy document.

Country's internal security is also facing threat of nuclear terrorism, besides other traditional and non-traditional threats.

that range of internal security threats vary from street crimes to the nuclear terrorism. This threat of nuclear terrorism is addition to the possibility of use of chemical and biological substances by the terrorists described by the policy document. However, the policy document does not explain the kind and extent of threat of nuclear terrorism.

The document says that it is hard to draw lines among traditional threats like organised crime, kidnapping for ransom and non-traditional threats like terrorism, sectarianism, extremism, militancy and insurgency under Taliban and al-Qaeda networks.

The NISP explains that Pakistan is a diverse country and the nature of the internal security environment also varies substantially from one part of the contrary to the other. Approach of the terrorists in the country had deepened on the comparative advantage available in the specific location of their operations.

In FATA, KP and Balochistan proximity of Afghanistan and presence of Taliban had made them ideal targets and abodes of terrorists. The national security policy says that the urban areas in all the provinces of the country have been the focus of terrorists for the last many years. Analysis of NCMC indicates that during 2010-2-13, terrorists largely targeted seven agencies of FATA; Karachi of Sindh; Peshawar, Kohat, Bannu, Hangu and Swabi districts of Khyber Pakhtunkhwa, and Quetta, Dera Bugti, Turbat and Kech districts of Balochistan with 2,820 terrorist incidents. This also defines the locus of terrorism in Pakistan.

In Balochistan, in addition to terrorism, another critical factor is limited influence of anti-state elements in Baloch majority districts, the document states. Amalgamating, sub-national movements with sectarian terrorism, people belonging to the Shiite Sect and the Punjab are targeted along with the security personnel. The NISP says that Karachi is the locus of urbanised crime and political violence in Sindh and attracts the attentions being the economic hub of Pakistan.

In the first eleven months of 2013, the death toll has risen to 2600 in Karachi, which means one person dies in every three hours due to violence in the metropolitan city. The document explaining the capacity of the NISA says that the total strength of

33 organisations in Pakistan, at provincial and federal level, dealing with internal security exceeds 600,000 and is more than standing army of Pakistan. However, approximately 56000 vacancies are still lying vacant in Police and CAFs. Pakistan is spending approximately Rs 155 billion on policing every year and this is 76% increase since 2009.

... The NISP describes that on the top of the internal security environment, the proverbial absence of a consolidated databank and poor analytical base makes the task even more difficult for policy development in any arena. In the absence of an integrated internal security response, space between the terrorist and the terrorized is continuously shrinking besides fuelling special fault lines. The non-traditional threat, as a consequence, have also inspired insurgency of ethnic, political, economic and sectarian in nature, thus confronting the challenges of war by proxy, subversion and worsening law and order situations. According to security policy, there is no forum for coordination between NIS operational and intelligence agencies in Pakistan and there has been a deficit at various levels: across provinces, within law enforcement agencies and among intelligence agencies. Provincial coordination remains non-existent and even interrogation methods vary across each province. Information sharing and analysis remains weak area while some information does gets shared individually, there is no institutionalised mechanism at province or federal level.

Explaining the issue of financing in terrorism, it says that terrorism financing goes unchecked in Pakistan and certain purportedly charitable organizations are a nexus between organized crime and extremists. No major structure, or strategy, of the state exists to undertake this task. In the past, a critical failure has been the inability of the government to plug sources of financial support to the terrorists and extremists. These sources appear as a support system to some public welfare and disaster relief organisations used by extremists.

Source: <http://www.awaztoday.com/>, March 3, 2014.

NUCLEAR WASTE MANAGEMENT

JAPAN

Illegal Nuclear Dumping in Shiga Raises Alarm

In March 2013, a resident of Takashima, a small town of about 51,000 people on the northwest side of Lake Biwa, discovered something unusual. Along the banks of a local river, someone had dumped, over a more than 500-meter-long area, 77 bags containing 300 tons of wood chips. Something about the bags aroused local suspicion, but inquiries by local residents to the Takashima Municipal Government the following month produced only vague assurances that the bags were part of a road-paving project along the river bank and that there was nothing to worry about. As it turned out, there was cause for concern. Local residents continued to pester the city and prefecture for answers, and by August independent monitors had found the bags were contaminated by radiation.

How contaminated the site was remains the subject of controversy. ... Details about what happened are still sketchy. Prefectural investigations have discovered who dumped the waste and parts of the story have been reported. On March 4, 2014, the Shiga government filed a criminal complaint with the Shiga Prefectural Police against three individuals — an executive with a consulting firm in Tokyo, the owner of a

construction company in Omihachiman in Shiga, and another man believed to have acted as a go-between. On March 6, 2014, the Shiga police raided several offices belonging to those implicated. But much information has been kept from the public, including the names of these people.

Maki Umemura, a local translator, is one of about a half-dozen residents who have filed an appeal with Shiga prosecutors and police, demanding a formal, public investigation. "The wood chips discovered in Takashima were part of a larger shipment of 9,000 tons being transported to Kagoshima Prefecture for use in a manure plant. But Kagoshima rejected the chips when they discovered they were tainted with radiation, including the highly toxic cesium-137. Worse, the remaining 8,700 tons of chips are still missing," she said.

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What the Takashima incident clearly demonstrated was just how easy it is for unscrupulous firms recruited to dispose of Fukushima's radioactive debris to simply dump it wherever they please, and how urgent it is to at least reduce the odds of another case of illegal dumping by constructing proper interim storage facilities for tainted waste as quickly as possible. But three years after March 11, 2011, where to store Fukushima's radioactive waste remains the subject of discussions between Tokyo and the towns, cities and prefectures affected.

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Fukushima Gov. Yuhei Sato has proposed a plan to build two interim storage facilities in the towns of Okuma and Futaba, which host the crippled Fukushima No. 1 power plant. The town of Naraha, farther south near the Fukushima No. 2 power plant, would meanwhile host a facility to dispose of incinerated ash by mixing it with concrete. But the local governments in Fukushima where the plants would be built have several conditions for agreeing to the proposal. One is a guarantee from Tokyo that waste stored at the facilities will be removed and sent elsewhere for final disposal within 30 years. The half-life of cesium-137 is 30 years, the maximum period Fukushima wants to host interim facilities.

... In addition, how long it will actually take to physically move the debris to the new facilities is, at this point, only an educated guess. Last December, an Environment Ministry panel was established to research transport methods for the estimated maximum 28 million cu. meters of Fukushima debris that needs to be put in interim storage. To complete the task in three years, the committee estimated, would require using nearly 2,000 10-ton trucks a day. ... Yet as Tokyo and Fukushima negotiate terms and try to set a clear timetable, the illegal dumping at Takashima has local politicians and residents elsewhere concerned that, due to the unprecedented nature of the Fukushima disaster and the fact that it's likely to be a while before the interim storage facilities are ready to go, their legal options will be limited if they happen to become the next victim of a drive-by nuclear dumping.

... As work to remove the wood chips was finishing up in early March, the prefecture refused to disclose crucial details, like where the chips are being taken. Workers at the site only said the waste was being taken to a "remote location" where they would be stored "for decades." Radiation levels in early March at the entrance to the dump site, after the chips were removed, had dropped to under 0.05 microsieverts per hour, according to Umemura's dosimeter — more or less within the prefecture's

pre-quake aerial radiation levels of 0.031-0.061 microsieverts per hour. ...

Source: <http://www.japantimes.co.jp/>, March 7, 2014.

USA

The Radiation Leak Site that Wants More Nuclear Waste

A recent radiation leak at America's only nuclear waste repository threatens the future of waste storage in the country. But leaders in the city of Carlsbad, New Mexico, still want their area to be a destination for America's radioactive history. Carlsbad works underground. On the road into the city, derricks pump oil from deep in the Earth. Residents go to work mining potash, a raw material used in fertiliser. Others give tours at Carlsbad Caverns National Park. And some of Carlsbad's underground workers make a half-mile (0.8km) journey into the earth not to take from the ground, but to bury the wastes of human invention. This is WIPP, the Waste Isolation Pilot Plant, the only long-term geologic repository for nuclear waste in the United States.

While other locales across the US have fought mightily to prevent the establishment of similar operations, almost all of Carlsbad is sanguine about the storage of nuclear materials just a 40-minute drive from the centre of town. That confidence has been tested in March, 2014 after a radiation leak and the initial report 13 workers had tested positive for radioactive contamination. And as the only permanent storage facility for nuclear waste, problems at WIPP create problems for the larger US nuclear defence complex, including delays of already scheduled shipments from around the country. But it is the first serious incident in WIPP's history, and Carlsbad still appears to have confidence, albeit slightly shaken, in the site. In fact, town officials are hoping their corner of New Mexico can be the home of even more nuclear waste.

Radiation Leak: The facility, 26 miles (42km) east of the city, looks from the outside like any industrial site, except for the large, empty canisters sitting in the car park. But 2,150ft (655m) below, WIPP is a cool cavern, with wide pathways cut out of pure salt on every side. Each storage section, known as a panel, is 13ft high, 33ft wide and 300ft long. WIPP can only take certain types of waste. It must all be from US defence projects and be transuranic - contaminated by elements beyond uranium in the

periodic table in which radioactivity is particularly long-lived. Most of its waste is solid: radioactive gloves, tools and debris. ... Workers wear radiation counters and spend limited time in direct proximity to the waste. Most of it emits radioactivity through particles known as alpha-emitters, which are seriously dangerous only if ingested and inhaled. In October 2013, WIPP officials and Carlsbad residents told the BBC the site's excellent safety record gave them confidence.

In early February, 2014 that record ended, when a small fire on a lorry hauling salt closed down the underground portion of the site. Then late on 14 February, 2014, underground sensors detected radiation. More tests confirmed that two radioactive

particles, isotopes of americium and plutonium, were found on aboveground air filters. Later, preliminary test results indicated 13 employees working above ground that day had inhaled or ingested radioactive material. On March 5, 2014 energy department officials said follow-up testing on the employees was negative for both isotopes. Such a result "indicates that levels were extremely low and the employees are unlikely to experience any serious health effects", Carlsbad field office manager Jose Franco wrote. WIPP officials said the amount of radioactivity detected aboveground, about 3 mRems, is less than in the exposure of a chest x-ray (10 mRems). An investigation is underway to determine what exactly happened. ...



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Centre for Air Power Studies

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