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**OPINION – Sitakanta Mishra**

**Nuclear Security and India**

The third Nuclear Security Summit, scheduled for March 24-25 in Hague, aims to strengthen the security of nuclear materials worldwide. The previous two Summits (Washington 2010 and Seoul 2012) have brought the issue of 'nuclear security' into a sharper focus. Along with other 50 countries, India has participated positively and substantively in the summits while refurbishing its own domestic legal provisions, technical framework and political resolve to help achieve its intended objectives.

At the outset, India fully shares global concern on nuclear safety-security and views the summit initiative is in its own interest. Given India's growing energy demand and nuclear energy as a viable component of its energy mix, the NSS initiative in fact "assists India's objective of promoting a safe and secure expansion of civil nuclear energy". Therefore, Prime Minister Manmohan Singh at the 2010 Washington Summit acknowledged "nuclear security as one of the foremost challenges we face today."

Over the decades, while developing technologies for safe nuclear power, India has laid equal emphasis on building a sound national nuclear governance framework – constituting legal, institutional and physical provisions. At the domestic level, the 1962 Atomic Energy Act provides the legal framework for securing nuclear related activities. Under this Act, issues relating to radiation

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protection, safe disposal of radioactive waste, working of mines minerals and handling of prescribed substances, irradiation of food, etc have been addressed. The Mines and Mineral Act 1957, the WMD Act 2005 and the Civil Liability Act 2010

are other overarching legal provisions to ensure safety and security of nuclear materials within the country. The proposed NSRA, to replace AERB, will be endowed with stringent authority and independence for impartial oversight.

As far as India's export control framework is concerned, it matches the global standards

and its policy of non-transfer of reprocessing and enrichment technologies, in fact, puts it in an "NPT plus" category. India has recently made changes to

its national export control list – the Special Chemicals, Organisms, Materials, Electronics and Technology (SCOMET) List. 'Category Zero' of the list includes "nuclear materials, nuclear-related other materials, equipment and technology".

India is party to a number of multilateral regimes including the Convention on the Physical Protection of Nuclear Materials, International Convention for the Suppression of Acts of Nuclear Terrorism and fully supports the UNSC Resolution 1540 and the 2003 IAEA Code of Conduct on the Safety and Security of Radioactive Source. At the same time, it has maintained an impeccable non-proliferation record.

On the institutional front, the country-wide nuclear infrastructure is regulated by well-structured bodies and centres of excellence. The AEC is the apex body under which the DAE and AERB operate. As a 'house gift' India has started the Global Centre for Nuclear Energy Partnership (GCNEP) – a centre of excellence to "conduct research and development of design systems that are intrinsically safe, secure, proliferation resistant and sustainable". "Agreements for cooperation concerning GCNEP related programmes and activities have been signed with the USA, Russia, France and IAEA." So far, India has conducted nine Regional Training Courses on Nuclear Security in cooperation with the IAEA-US Regional Radiological Security Partnership. It has offered technical assistance to developing countries including the supply of indigenously developed Cobalt teletherapy machines – Bhabhatrons – for cancer treatment.

More importantly, India through its unique three-stage nuclear programme, based on the 'closed fuel cycle', ensures security of nuclear materials. In this system, the spent fuel is reprocessed to reuse, thereby reducing the plutonium stockpile and chances of misuse. India is also working to develop proliferation-resistant fuel cycles and has

developed an Advanced Heavy Water Reactor based on LEU and thorium with new safety and proliferation-resistant features. Responding to the global concern with regard to use of HEU in research reactors, India has shut down its only research reactor using HEU fuel and at present no research reactor is operating on HEU.

As an active partner of the IAEA, India has contributed US\$ 1 million to the IAEA Nuclear Security Fund for the year 2012-13 and hosted the 2012 Sherpa meeting in New Delhi in the run-up to the Seoul Summit.

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architecture is concerned, India's nuclear installations are guarded by the CISF, a paramilitary force equipped with strategies to secure nuclear facilities in coordination with and with inputs from, other agencies. In the siting of a Nuclear Power Plant, the zoning concept is followed that helps in enforcing emergency preparedness as well as security arrangements. Beside the guards, gate and guns

strategy, four brigades of First Responders are stationed in four directions of the country. At all entry and exit points like border roads, airports and sea ports, radiation monitoring devices are installed to monitor movement of radioactive materials. The Mumbai seaport, where India's major chunk of shipping takes place, is CSI compliant.

To address the personnel reliability and insider threat issue, the AERB has developed a formal code of professional ethical values for the employees to adhere to. While all the facilities are covered by a 'multi-layered security system', the facility-specific Nuclear Material Accounting (NUMAC) arrangements are in place. The Inventory Information and Control and Data Management Section and a control laboratory compile and preserve all the information. It has also

In fact, nuclear security and safety in India begins right from the site selection stage and then all through the design stage of nuclear facilities. As far as physical security and safety

architecture is concerned, India's nuclear installations are guarded by the CISF, a paramilitary force equipped with strategies to secure nuclear facilities in coordination with and with inputs from, other agencies. In the siting of a Nuclear Power Plant, the zoning concept is followed that helps in enforcing emergency preparedness as well as security arrangements. Beside the guards, gate and guns strategy, four brigades of First Responders are stationed in four directions of the country. At all entry and exit points like border roads, airports and sea ports, radiation monitoring devices are installed to monitor movement of radioactive materials. The Mumbai seaport, where India's major chunk of shipping takes place, is CSI compliant.

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stipulated a Safety Guide on security of radioactive material during transport (AERB/NRF-TS/SG-10) prescribing different security levels for different materials (Category 1 to 5) depending upon their degree of fissile characteristics and the danger involved. No-fly-zone restrictions around nuclear installations are in place and reportedly, anti-aircraft guns have also been installed to deal with any threat from the sky.

**Much before the NSS, India has internalised the nuclear security practice in its nuclear programme. Surprisingly the NTI has ranked India lower in its Index alleging lack of transparency and independence of regulatory authority, among other issue areas. As India adheres to a no-first-use policy, secrecy is utmost important and the regulatory authority – AERB – functions independent of the DAE.**

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*Source: Dr Mishra is a Research Fellow at the Centre for Air Power Studies, New Delhi. <http://www.dsalert.org/dialogue/2014/02/nuclear-security-and-india/>, 27 February 2014.*

**OPINION – Rizwan Asghar**

**Preventing Nuclear Terrorism**

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. On October 11, 2001, exactly a month after the terrorist attacks on the WTC, President Bush was informed by his CIA director, Tenet, about the presence of Al Qaeda-linked terrorists in New York City with a 10-kt 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

**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.**

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 SU, hundreds of confirmed cases of successful theft of

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

nuclear materials were reported in Russia. In 1997, General Alexander Lebed...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 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.

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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 SU 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... .

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 NPT, IAEA framework.

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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.... The SC 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 SC 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 CPPNM, 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>, 25 February 2014.

**OPINION – Frank Bass**

**Moscow's Struggle to Protect Nuclear Material**

More than two decades after the collapse of the SU, the planet's largest stockpile of nuclear weapons materials remains insecure.... In the wake of the Soviet collapse into 15 independent states, hundreds and perhaps thousands of grammes of nuclear material - including HEU used in atomic bombs - were spirited away from Russia's nuclear heartland... questions arise about embarrassing lapses in the security of the United States' own nuclear stockpile.

US Defense Secretary Hagel ordered a review of the nation's nuclear forces in January 2014 after a series of problems, including rampant cheating

by officers on proficiency tests at a nuclear missile launch site in Montana, and an investigation of 10 Air Force officers accused of possessing recreational drugs. Separately, in 2012, three peace activists breached security at the Y-12 National Security Complex in Oak Ridge, Tennessee, where enriched uranium for nuclear bombs is stored. Nuclear operations were temporarily shut down.

**Lax Security:** ...The 1991 collapse of the SU and its central economy resulted in lax security, desertions and thefts from secret "atomic cities" located in southern Siberia, where nuclear weapons were manufactured and stored...an attack using a fully functioning nuclear device built with at least six kgs of plutonium - the same amount used in the US bomb dropped on Nagasaki during World War II - is most likely beyond the capability of separatist organisations operating in southern Russia. A "dirty bomb" that features

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conventional explosives laced with radioactive materials such as cobalt or strontium is considered a more feasible threat. ...Almost four dozen UN members, including the US and Russia, agreed in April 2010 to secure and account for all nuclear materials within four years. While the Russian government has rejected fears that its nuclear inventory is not secure, the DNI report questions whether the billions in aid, including money for radiation sensors at key border crossings, will prevent nuclear materials theft and smuggling.

**'Attractive Target':** "Russia's vast stockpile of nuclear material, scattered across multiple facilities, continues to present an attractive theft target,"... "Security of this material has improved since the fall of the SU, but we lack information on the extent of recent thefts, and vulnerabilities remain. Probable Russian-origin weapons-usable nuclear material has continued to circulate on the black market." Russian officials have periodically confirmed and denied reports of attempted thefts of nuclear materials from the nation's arsenals...

...US Departments of Defense, State and Energy spend about \$1.4 billion annually to help Russia dismantle and secure its nuclear materials... In January 2014, a NTI report found Russia's control of materials was in the bottom third of nuclear states, and its overall score remained unchanged from 2012.... Russia has the second-highest risk factors of any nuclear state, ahead of only Pakistan. Those risk factors include political instability, ineffective governance, pervasive corruption, and the presence of groups determined to obtain nuclear materials. The US, with the world's second-largest stockpile of nuclear weapons, slipped slightly from 2012, falling to the 11th-safest nuclear state. Its political risk factors ranked 10th in the world, tied with Poland and trailing countries that include Japan, Germany and France.

**Wrong Hands:** ...Authorities in Moscow are hosting the \$51 billion Winter Olympic Games... contend

that Sochi will be a safe destination, despite its proximity to separatist movements and a history of politically motivated attacks on the Olympics....

Source: <http://www.aljazeera.com>, 18 February 2014.

**OPINION – Erlan Idrissov**

**Kazakhstan: The Model of Nuclear Disarmament**

The CAR has been working on reducing international nuclear tensions for the past twenty years... took a large step in the international arena with accession to the NPT. As a non-nuclear state, it was a formal sign of Kazakhstan's determination to work for a world free of nuclear weapons - an ambition which has helped define our country since we first gained independence in 1991. ...For forty years, Kazakhstan was a test site for nuclear weapons. The fall-out from these tests at Semipalatinsk - of which over 100 were above ground - has left a terrible legacy. A generation later, the deaths and deformities continue. The threat for us from nuclear weapons is not abstract but all too real. This is why, in August of 1991, months before we attained full independence - and to the joy of our people - President Nazabayev ordered the closure of the Semipalatinsk site. At Kazakhstan's urging, the date of August 29 has now been commemorated officially by the UN as the International Day against Nuclear Tests. Kazakhstan followed this move with an even more historic initiative when we voluntarily renounced the world's fourth largest nuclear arsenal, which we inherited on the break-up of the Soviet Union. No country has done more to bring the goals of the NPT closer. Ever since those early days, we have continued to work tirelessly to achieve the goals of the treaty. We have encouraged countries across Central Asia to come together to declare the region a nuclear-free zone - a model for wider progress. And we have used our influence in a wide range of international forums to improve nuclear safety. Our increasing international authority in this

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field - and our good relations with all parties - also led last year to Kazakhstan being chosen to host critical talks between Iran and the international community over its nuclear ambitions. We are glad that real progress has been made, which opens the way to reduce tensions across the wider region. ... We remain absolutely convinced that only a completely nuclear-free world can prevent the deliberate or accidental use of these terrifying weapons. With the spread of violent extremism over the past 20 years, the threat we face from the doomsday weapons is, in many ways, greater than it ever was in the darkest days of the Cold War. It is why Kazakhstan has been an active partner in the NSSs in Washington and Seoul, and will also attend the third meeting in the Hague.... We need to step up global efforts against nuclear terrorism and prevent extremists gaining access to nuclear facilities, material and technology wherever they are sited. But the recent talks with Iran also highlighted the importance of decoupling fears about the spread of nuclear weapons with the legitimate desire of countries for civilian nuclear power. This ambition is, of course, recognised within the NPT itself - which acknowledges the right of every country to develop nuclear energy for peaceful purposes. Indeed, as the world struggles to meet the twin demands of spreading prosperity and tackling climate change, the low-carbon energy that nuclear power produces becomes more important. Our challenge is to balance this expansion while meeting fears about the spread and security of nuclear weapons. ...Kazakhstan shares the views of the IAEA that the safe production of enriched uranium must be at the heart of any solution. The difficulty is that the facilities needed to produce the fuel which powers civilian nuclear plants can be modified to turn out weapons-grade uranium. The key to overcoming this challenge is to find ways to provide countries with a guaranteed supply of enriched uranium to power nuclear plants, so there is no need for them to develop their own enrichment facilities. This is the aim of IAEA plans

for an international nuclear fuel bank. Kazakhstan not only supports this innovative approach to civilian nuclear power but has also offered to host the first bank. We are, after all, the world's largest producer of uranium, and have proven expertise to provide the secure facilities needed. We also, crucially, have good relations not only with existing nuclear powers but also with those seeking to develop a civilian nuclear power sector. But a nuclear fuel bank is only one step, although important, towards a world in which the threat from nuclear weapons and terrorism is removed. We need urgently to conclude the treaty banning the production of fissile materials and the early entry into force of the CTBT. Encouraging progress in all of these areas would be at the top of our agenda if we are successful in our candidacy for a seat on the UNSC for the years 2017-2018. For the past two decades, Kazakhstan has been a strong advocate of nuclear non-proliferation. We are determined to step up our efforts to deliver a peaceful and stable world.

Source: <http://www.aljazeera.com>, 14 February 2014.

**OPINION – D. Parvaz**

**Debunking Fukushima's Radiation Myths**

Japan's ongoing nuclear disaster is scary enough, but some rumours and hoaxes linked to it are alarming and persistent. Although the real ramifications of the meltdown of the Fukushima-Daiichi nuclear plant are bad enough, hyperbolic claims abound of drastic spikes in cancer rates, mutant sea creatures and more. And little of this has been successfully countered with, well, anything close to reason. If public trust in major institutions is undermined, many people turn to social media to find information they deem more authoritative.

...40% of people tend to place a greater priority on three main comparisons when assessing their safety. A temporal comparison makes people consider what they were exposed to before and after an incident. A geographical comparison considers exposure in the context of other locations' exposure. Finally, a situational comparison allows people to draw frames of reference around more familiar experiences, such as how much radiation one is exposed to in a dental X-ray versus being in Fukushima....

**Giant Squid:** ..."The radioactivity is also being transported over very long distances with the ocean currents, but will at the same time be diluted to levels where there is no concern for harmful effects on sea life or for using, for example, the beaches along the North American west coast for recreational purposes."...

**Radiation from Fukushima is Frying California's Beaches:** It wasn't long after the March 2011 trifecta of disasters - earthquake, tsunami and nuclear meltdown - that Americans started to worry about radioactive debris and water cluttering their coastlines and destroying their beaches... This isn't to say that minute levels of radiation from Fukushima has not reached the US - or many other countries - but it's in "levels that are thousands of times lower than anything that has ever been demonstrated to cause health effects".

**Don't Consume Japanese Rice, Seafood, Tea... or Anything:** Although Japanese regulators lowered the permissible level of radiation in food dramatically - from 500 becquerel/kg a year after the nuclear accident to 100bq/kg - the fear persists, and, now and again, there is panic over radiation being found in some food... At these low doses, it's difficult to perform epidemiological studies to see if foodstuffs carry increased risks, although studies are ongoing....

**We're All Going to Die of Cancer:** That people were exposed to radiation above normal, pre-accident limits is not in dispute. Nor is the fact that it might take years to see if and how illnesses develop among those who were exposed. ..."The first thing that people don't realise is that radiation is natural. We are exposed to radiation from outer space... that radiation is there, it provides us with a background exposure as we live on this planet".... "If you look at the total dose of radiation, it looks to us that they reduced the doses by a factor of 10, from doses where we probably would be concerned about increases in cancer to doses where any notional increased risk is small compared with this annual difference in the fluctuation in the background [radiation] rate."...

Infants drink milk, and the thyroids of infants are very absorbent of iodine, which was present in the air and in food stuffs initially. Regulators tried to control what went on the market, and while the risk



remains, ... it was "borderline as to whether there is one in a million [cases of thyroid cancer among infants] or twice as many, two in a million...and on this fluctuation, you will not be able to see anything...we can't rule out whether we can find something, but it's borderline".

**The Contamination is Never Going Away:**

Just how long it will really take to decommission the plant is up for debate, although the Japanese government estimated that it would take roughly 40 years. And that's just the plant itself. Some, however, believe that it'll take closer to a century, if not longer, before the area is decontaminated.... "If you can measure something, if it's present, then someone can say that it is contaminated - but in such a case we are contaminated our bodies contain natural radionuclides such as potassium-40, so we are 'contaminated';" "It's completely natural and [has been around for] billions of years."

What's controversial is managing public expectation.

"The public...probably expects something completely clean, with not one atom of caesium there, which is impossible," referring to the radioactive element caesium-137, present in the soil and water around the not entirely stable plant. With some compromise, people can live and work - but it depends on where, exactly, and the "local constraints...but there is a range of possibility". The exclusion zone that remain around the Chernobyl nuclear power plant exists largely due to economic reasons, as "infrastructure is too expensive," said Berkovskyy. "Also an issue is the availability of expertise throughout the decades it will take to decommission a plant and carry out decontamination plans.

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"Concerning the time frame of decommissioning of the Chernobyl Unit 4, it is a trade-off between the level of workers' exposure - many short-lived radionuclides disappeared with time - and the availability of expertise of experts who knew the plant before the accident. "It's completely

feasible to decommission it [the damaged Daiichi plant] and put it in a safe condition - and it's completely feasible to remediate the area - it is proven by Chernobyl."

Source:<http://www.aljazeera.com>, 21 February 2014.

**OPINION – Winslow Myers**

**Inevitability?**

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Activists, frustrated by a Congress in the pocket of military-industrial corporations, have rightly shifted their focus to building local coalitions that emphasize bottom-up renewal. The peace movement is still hard at work, but overwhelmed by the size of the powers arrayed against it. Maybe it's the top military brass of the nuclear nations who ought to be leading the charge toward reciprocal disarmament, because their political masters have laid upon them an impossible task: to make zero mistakes when interpreting the behavior of other nations, to keep these weapons and the people who handle them in a state of hair-trigger readiness without tipping over the edge into accidents, and to avoid nuclear winter should, God forbid, the weapons be used.

**Just as the occasional crash of a passenger plane or a space shuttle has proven inevitable, or a Chernobyl or Fukushima or Three Mile Island meltdown is unlikely but nevertheless has also proven inescapable, so too it is inevitable that, unless we change direction as a species, there will be a fatal incident involving nuclear weapons.**

A tall order indeed, because our experience with technologically complex systems designed not to fail is that sometimes they all fail—not a Rumsfeldian unknown. Just as the occasional crash of a passenger plane or a space shuttle has proven inevitable, or a Chernobyl or Fukushima or Three Mile Island



meltdown is unlikely but nevertheless has also proven inescapable, so too it is inevitable that, unless we change direction as a species, there will be a fatal incident involving nuclear weapons. ...The US, even while a signatory to international treaties that enjoin it to reduce its nuclear weapons and cooperate with other states to reduce theirs, is poised to spend untold billions, money needed desperately for, say, transitioning to clean, sustainable sources of energy, to renew its nuclear weapons systems... .

**In the case of terrorists, the objective is to secure and keep separate the parts and ingredients of weapons. The vast majority of nations are in agreement with this goal and willing to cooperate to reach it. Meanwhile the far greater danger may be the relentless momentum engendered by the in-place weapons systems of the nuclear club, motivating more states to want to join, resulting in more command and control complexity, and more probability of misinterpretation.**

...Avoiding nuclear terrorism may actually be easier to accomplish than to guarantee in perpetuity those impossible conditions attached to "legitimate" state-controlled nuclear weapons. In the case of terrorists, the objective is to secure and keep separate the parts and ingredients of weapons. The vast majority of nations are in agreement with this goal and willing to cooperate to reach it. Meanwhile the far greater danger may be the relentless momentum engendered by the in-place weapons systems of the nuclear club, motivating more states to want to join, resulting in more command and control complexity, and more probability of misinterpretation....

Source: <http://www.huntingtonnews.net>, 16 February 2014.

**OPINION – Akbar Ganji**

**Iran's Long and Winding Road to Lifting the Sanctions**

The Geneva Accord between Iran and P5+1 went into effect on January 20, but the debate still rages in Iran. For Iran's Leader Khamenei, uranium enrichment is a red line that he will not relinquish.

The conservatives view the Accord very negatively, whereas the supporters of Hassan Rouhani administration consider it a positive development. In his struggle to see through the realisation of a comprehensive nuclear deal

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with the West, Iran's president will have to face not only Western suspicion but also domestic opposition. Ultimately, however, the potential benefit to Iran from the deal is worth fighting for. ...US military aid has guaranteed Israel's strategic superiority over the entire region. This has enabled Benjamin Netanyahu to use the dispute with Iran to distract attention from the fact that Israel continues to occupy Palestinian land.

Iran has made many concessions although under the NPT they are considered among its rights. It is true that the Geneva Accord has imposed on the country an inspection regime that is beyond Iran's Safeguards Agreement. However, given the current atmosphere of mistrust, the Rouhani administration had no choice but to halt some of the peaceful nuclear projects. Despite these concessions, the Accord has ultimately recognised Iran's rights to peaceful use of nuclear energy. More difficult negotiations, however, are still ahead since the two sides have different interpretations of both the Geneva Accord and the NPT. Iran believes that the right to enrich uranium has been recognised by the Accord. US President Obama administration does not seem to oppose Iran's enrichment of uranium at up to a level of 5 percent, but the powerful lobbies of Israel and Saudi Arabia, and the extremists and warmongers in the US, are doing their utmost to see the Accord fail.

If the Western powers do not recognise - in writing - Iran's right to uranium enrichment, the negotiations will fail. But, because both the US and the Iranian governments are committed to resolving the current diplomatic impasse, even if these negotiations stop, there will eventually be another attempt to restart them. That is to say, the failure of the negotiations will not necessarily mean immediate war.

**A Balancing Act at Home:** In Iran, the nuclear deal has been met with different reactions on the political arena. The reformists, led by former President Khatami, and the pragmatists, led by another former president, Rafsanjani, both support the Rouhani administration. Moderate conservatives are not too enthusiastic about the president but a majority of them do not oppose the Geneva Accord. The hardline conservatives, however, have fiercely attacked the Accord, claiming that Iran has made too many concessions, but has received very little in return... The hardliners do not have a significant social base of support, and instead present themselves as loyal supporters of Khamenei.

Thus, Khamenei's support for Rouhani's efforts disarms the hardliners. If, after inspections, the IAEA certified that Iran's nuclear programme is peaceful, if Iran's right to produce LEU was honoured, and if the economic sanctions were gradually lifted, the hardliners will be completely marginalised. Hassan Rouhani's electoral victory is a hopeful sign. The hope is not that Iran would soon be democratised, but rather that it will be able to remove the shadow of war and end the sanctions. The Ahmadinejad administration squandered \$800bn in oil revenues, corrupted the state, and left behind billions of dollars in debt that the nation must now foot. Less than six months after taking office, the Rouhani administration has halted the spiralling growth of inflation, as well as the contraction of the economy. The lifting of some of the sanctions as a result of the Geneva Accord has made a positive psychological impact on the economy, and investment optimism has risen.

The promise of improved economic conditions is so

**Hassan Rouhani's electoral victory is a hopeful sign. The hope is not that Iran would soon be democratised, but rather that it will be able to remove the shadow of war and end the sanctions.**

**The promise of improved economic conditions is so important to ordinary Iranians that many of them support the nuclear negotiations and the bid to improve Iran's relations with Western powers and the Middle East. Therefore, it is in Iran's national interest to advance a policy of detente with the US and its allies, as well as the Middle East.**

**The long time 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.**

important to ordinary Iranians that many of them support the nuclear negotiations and the bid to improve Iran's relations with Western powers and the Middle East. Therefore, it is in Iran's national interest to advance a policy of detente with the US and its allies, as well as the Middle East. The negotiations will be long. It will take years to create mutual trust, and for economic sanctions on Iran to be lifted. However, if the Rouhani administration continues advancing its foreign policy of peace with the world and improves the economy, the domestic situation will also change in favour of democratic forces.

Source:<http://www.aljazeera.com>, 14 February 2014.

## **NUCLEAR STRATEGY**

### **PAKISTAN**

#### **Pakistani Leaders to Retain Nuclear-Arms Authority in Crises**

Pakistan's top leaders would not delegate advance authority over nuclear arms to unit commanders, even in the event of crisis with India, a senior official says. 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 prime minister," according to the high-level Pakistani government official, speaking to reporters on condition of not being named. The long time 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, "would rather commit suicide than let this fall in somebody else's hands who's not supposed to have it."

Asked subsequently about US concerns regarding Pakistani security over its stockpile — particularly after militants have attacked armed forces

installations in recent years — the senior official said, nuclear safety is of paramount priority to the nation's leaders. "If something like that happens, who is the biggest affectee of that? It's us. If there is radiation, it's us. It's our people," the official said. "So why would we risk our own people? We are very, very careful about it."

*Source: Elaine M. Grossman, NTI, 27 February 2014.*

## **BALLISTIC MISSILE DEFENCE**

### **JAPAN-USA**

#### **Japan-US Anti-Ballistic Missile Drill to Continue Until Feb 28**

Japan and the US are continuing their latest joint anti-ballistic missile drill at the Yokosuka naval base in Japan's Kanagawa Prefecture. The drill began on 25 February, and is set to wrap up on February 28th.

**Despite Russia's recent efforts to broker a peaceful resolution of the Syrian chemical weapons crisis, as well as its good offices in helping resolve the Iranian nuclear conflict with Washington, the Obama administration is moving ahead with its highly provocative nuclear BMD deployments around Russia.**

Two battleships from Japan's Maritime Self-Defense Force, the Kirishima and Kongo, have joined in the drills. They are both equipped with the Aegis BMD. They will be used along with the US's latest SBX radar system.

The head of the Japan Maritime Self-Defense Force and the head of the US's Seventh Naval fleet are acting as the drill's co-commanding officers. Japanese media is reporting that the drill is aimed at improving missile cooperation and capabilities between Japanese and US forces. This is the fourth anti-ballistic drill held by the two countries since 2011.

*Source: <http://english.cntv.cn>, 27 February 2014.*

### **USA**

#### **US Missile Shield: 'Russian Bear Seeping with One Eye Open'**

Washington's explanation that its strengthening missile shield in Europe is being built to guard against the Iranian nuclear threat is no more believable than it was 10 years ago.

Despite Russia's recent efforts to broker a peaceful resolution of the Syrian chemical weapons crisis, as well as its good offices in helping resolve the Iranian nuclear conflict with Washington, the Obama

administration is moving ahead with its highly provocative nuclear BMD deployments around Russia. What we are not being told by Western politicians is the fact that this action, far from peaceful, brings the world closer than ever to nuclear war by miscalculation.

On February 11, the first of four US advanced destroyers arrived in Rota, Spain. They will form a key part of the US-controlled ballistic missile "shield." The shield is being sold as a protection for Europe against a possible Iranian nuclear missile attack. The four ships, all of which are planned to be in place over the coming two years, carry advanced sensor capabilities and interceptor missiles which can detect and shoot down ballistic missiles.... The USS Donald Cook, a guided-missile destroyer of the US Navy, equipped with the high-tech Aegis combat BMD system, docked in the southern port of Rota. Rota, nominally commanded by a Spanish admiral, is fully US-funded. It is the largest American military community in Spain, housing US Navy and US Marine Corps personnel. It will be permanently based there, according to NATO Secretary General Rasmussen...

**Target Russia:** *Washington continues to insist that the US BMD deployment across Europe targets possible Iranian missile attacks on Europe. The reality, as Moscow has declared again and again since 2001, when the Bush administration first announced the plan, is to target the only nuclear arsenal on Earth capable of countering a US nuclear attack, namely, Russia's.*

Indeed, BMD was top on the agenda of Defense Secretary Don Rumsfeld and George W. Bush from the very first days of the administration in 2001. Six months before the shocking events of September 11, 2001... The president insisted back then, almost 13 years ago, that the purpose of his commitment to build a US

missile shield was not aimed at Russia: *"Today's Russia is not our enemy"* Bush said. Instead, he insisted, the BMD system was needed only against "terrorists," against "rogue" nations like Iraq, Iran or North Korea.

In fact, as military experts from Moscow to Beijing to Berlin were quick to point out, no "terrorists" or small rogue state had any such nuclear missile delivery capability. Nor do they have today, according to US intelligence estimates.

...The details of official US military policy reports demonstrated, beyond doubt, that it had been the deliberate and unflinching policy of Washington since the collapse of the SU to systematically and relentlessly — throughout the administrations of four US Presidents — to pursue nuclear primacy (unilateral assured destruction) and the capacity for absolute, global military dominance, what the Pentagon called Full Spectrum Dominance.

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**In addition to the missile-loaded USS Donald Cook in Rota, the US has BMD bases in Turkey, Bulgaria, Poland and the Czech Republic, all aimed at Russia.**

**US Nuclear Primacy:** *...under the Pentagon's then-new CONPLAN 8022, would give the US what the military called, "Escalation Dominance"—the ability to win a war at any level of violence, including nuclear war.*

...It's little wonder then that Russia insists that the Washington BMD deployment—and it is only Washington that controls the missiles in BMD bases—is aggressive in the extreme. To serious Russian protests, Washington responds with the even hollower lie that the European missile "shield" is aimed at Iran. Today, in addition to the missile-loaded USS Donald Cook in Rota, the US has BMD bases in Turkey, Bulgaria, Poland and the Czech Republic, all aimed at Russia.... Today as Polish Foreign Minister, Sikorski, along with US

**Are playing key roles in trying to sever Ukraine from Russia to further isolate Russia from the world. What they clearly fail to realize is that, even if the Russian Bear is sleeping, she is sleeping with one eye open.**

Assistant Secretary of State for European Affairs Victoria Nuland, are playing key roles in trying to sever Ukraine from Russia to further isolate Russia from the world. What they clearly fail to

realize is that, even if the Russian Bear is sleeping, she is sleeping with one eye open.

The Washington neo-conservatives' agenda to reduce Russia to a chaotic shard of a functioning nation is not the most intelligent strategy of some in Washington. But then, neo-conservative war hawks have never been renowned for their intelligence, more for their brutal war strategies in Iraq, Afghanistan, Libya, Syria and now, perhaps in a potential Third World War triggered by their insistence on BMD aimed at the Russian nuclear strike force.

Source: <http://rt.com>, 17 February 2014.

### NUCLEAR ENERGY

#### INDONESIA

##### Indonesia Scales Back Immediate Nuclear Plans

Since the 1980s Indonesia has had various plans for 2 GWe to 7 GWe of nuclear capacity to serve the Bali-Java grid, which supplies three quarters of the country's electricity demand – 132 TWh in 2012. A number of sites have been considered, most recently on West Bangka Island off the north coast of southern Sumatra, for up to 10 GWe. PT PLN (Persero), the Indonesia Electricity Corporation, projects 55 GWe new capacity by 2021, most of this coal-fired. But for now, the immediate nuclear power plans have come back to a 'non-commercial power reactor' of about 30 MWe built at the site of the country's main research reactor at Serpong, on the outskirts of Jakarta.

Indonesia's National Atomic Energy Agency (BATAN) was established in 1958, and the country has a greater depth of experience and infrastructure in nuclear technology than any other southeast Asian country except Australia. During the 1980s many technical people were trained in anticipation of nuclear power development then, many of these are still available for new projects. The Research & Technology Ministry (RISTEK) is advancing the present plans, but no choice of technology has been announced. The choice under 100 MWe is very limited. Indonesia's Nuclear Energy Regulatory Agency (BAPETEN) has been working with the International Atomic Energy Agency in reviewing at least three of the sites proposed for a larger plant.

RISTEK reports public opinion late in 2013 showing 76.5% positive about nuclear science and technology, and 60.4% agreeing with building a nuclear power plant in the country.

Source: *World Nuclear News*, 21 February 2014.

#### IRAN

##### Iran Seeks New Russia Reactor in Exchange for Oil

Iran's ambassador to Moscow said Russia could build the Islamic republic a second nuclear power reactor under a proposed oil-for-goods swap that has raised grave concern in Washington. Ambassador Sanaei said the two close trading partners have been negotiating Iran's delivery of hundreds of thousands of barrels of oil a day since a meeting at a regional summit in September 2013 between Russian President Putin and his counterpart Rouhani. Russian officials have neither confirmed nor denied the discussions while stressing that they would not break existing UN sanctions on the Islamic state. But Washington and the European Union have imposed their own restrictions over Tehran's disputed nuclear programme that also penalise countries and companies dealing in certain areas with Iran.

The White House has raised "serious concern" about the potential deal — which one Russian report said involved the delivery of 500,000 barrels of crude per day — because it would boost Iran's oil exports by more than 50 percent. Iran's crude shipments are believed to have shrunk under the impact of the unilateral Western sanctions to less than one million barrels per day from the 2.5-million-barrel figure they reached in late 2011. Sanaei said Iran was interested in acquiring Russian heavy trucks and railroad equipment in exchange for the oil deliveries. "A part of the funds (from the oil sales) could also go toward the construction by Russian companies of a second nuclear reactor at Bushehr," Sanaei

Russia completed the construction of the Islamic republic's sole nuclear power plant once the project was dropped by Germany's industrial giant Siemens following Iran's 1979 revolution. The plant's single reactor produces 1,000 megawatts of electricity — a small fraction of what the oil-rich country says it wants to produce from nuclear power. Tehran has

ferverly rejected Western and Israeli suspicions that its nuclear programme is masking a covert weapons drive. Sanaei's confirmation of the behind-the-scenes negotiations comes a day before world powers and Iran resume negotiations in Vienna aimed at reaching a comprehensive accord on Tehran's nuclear drive. Iran has agreed to freeze some nuclear activities for six months under a landmark interim agreement sealed in November 2013.

It won modest sanctions relief in return that also included a

promise by Western powers not to impose new restrictions on its hard-hit economy. But most of the Western oil sanctions against the Islamic republic remain in place. The White House fears that Russia's acquisition of such large quantities of Iranian oil could take away much of Tehran's incentive to conduct earnest nuclear programme discussions in Vienna. Relations between Moscow and Tehran have wavered throughout history but included a close alliance in the 1980s after the fall of the shah. Russia is now keen to see its industrial giants be the first through the door should most of the sanctions against Iran be lifted upon the conclusion of a formal nuclear pact by a tentative summer deadline. The massive barter deal is expected to top the agenda of a rare trip to Tehran planned for the end of April 2014 by Russian Economy Minister Alexei Ulyukayev.

The Iranian ambassador said he "did not exclude" the possibility of a final agreement being reached by the time the two nation's governments conduct an economic commission meeting in August 2014. Sanaei said Iran could use some of the proceeds to purchase Russian grain and electricity. He added that other parts of the deal could see Russian majors such as Lukoil develop deposits at Iran's South Pars natural gas field and the Assaluyeh energy zone. "In recent weeks, Tehran has been visited by business delegations from several countries, including from EU nations and even the United States," Sanaei said. "But I believe that our Russian friends, who were with us through difficult times, should enjoy an advantage on the Iranian market," he said.

Source: <http://www.nuclearpowerdaily.com>, 17 February 2014.

## JAPAN

### Three Years after Fukushima Disaster Japan Plans to Reopen Power Plants

Japan has unveiled plans to re-start dozens of nuclear reactors that were shut down after the Fukushima disaster despite past promises to end atomic energy altogether. Prime Minister Shinzo Abe has revealed a new Basic Energy Plan that will push to bring the country's 48 commercial reactors online if they pass safety tests

and could even see the construction of new ones. Observers say the U-turn has been influenced by political and economic factors, notably the change of leadership after the Fukushima meltdown three years ago, the worst nuclear disaster since Chernobyl. Worst disaster since Chernobyl: Japan has announced plans to re-start its 48 nuclear power plants that were shut down for safety reasons after the disaster at Fukushima (above) three years ago Worst disaster since Chernobyl: Japan has announced plans to re-start its 48 nuclear power plants that were shut down for safety reasons after the disaster at Fukushima (above) three years ago

Former Prime Minister Naoto Kan, who announced a commitment to end nuclear power in Japan by 2040, was far less connected to the country's nuclear industry than his successor. Meanwhile, the impact of closing down its plants, which generated some 30 per cent of its power, meant Japan had to massively increase its imports of oil and gas.

This contributed to a \$204billion (£120million) trade deficit between March 2011 and the end of last year, which in turn forced electricity bills up by more than 50 per cent, it was reported by Time. On top of that, carbon emissions within the electricity industry have doubled... . Toshimitsu Motegi, Japan's minister for trade and industry, said: 'If we had indicated "zero nuclear" without any basis, one could not call it a responsible energy policy.' The draft presented to the Cabinet for approval expected in March 2014, said did say that Japan's nuclear energy dependency will be reduced as much as possible, but that reactors meeting new safety standards set after the

**Russia is now keen to see its industrial giants be the first through the door should most of the sanctions against Iran be lifted upon the conclusion of a formal nuclear pact by a tentative summer deadline.**

2011 nuclear crisis should be restarted. Japan has 48 commercial reactors, but all are offline until and unless they pass the new safety requirements....

The draft of the Basic Energy Plan said that a mix of nuclear, renewable and fossil fuel will be the most reliable and stable source of electricity to meet Japan's energy needs. It did not specify the exact mix, citing uncertain factors such as the number of reactor restarts and the pace of renewable energy development. The government had planned to release the draft in January 2014 but a recommendation submitted by an expert panel was judged to be too pro-nuclear. ...The draft says Japan will continue its nuclear fuel recycling policy for now despite uncertainty at key facilities for the program, but added there is a need for 'flexibility' for possible changes to the policy down the road. Japan has tons of spent fuel and a stockpile of extracted plutonium, causing international concerns about nuclear proliferation. Officials have said the most realistic way to consume and reduce the plutonium is to restart the reactors to burn it. The previous energy plan compiled in 2010 called for a boost in nuclear power to about half of Japan's electricity needs by 2030 from about one-third before the Fukushima disaster.

*Source: Simon Tomlinson, <http://www.dailymail.co.uk>, 26 February 2014.*

#### **PAKISTAN**

#### **On the Fence: 'If Everyone Agrees, Nuclear Power is the Best Option'**

If all stakeholders are on board, nuclear power is the cheapest, most doable and climate-friendly option for Pakistan, claimed experts.... A group of scientists, nuclear physicists and politicians were speaking at a seminar on the 'Benefits, Safety and Security of Nuclear Power Plants in Karachi' at Marriott hotel. The CISS organised the seminar to create awareness about nuclear power and civil society concerns on the country's largest nuclear power plants — K-2 and K-3 — that are under

construction along the Karachi coast with the help of China.

In the opening remarks, former ambassador and Ciss executive director Ali Sarwar Naqvi said that Pakistan needs to revive its economy but the energy crises it faces is the gridlock on its path. "Hydel power has become a political controversy while nuclear power is a cheap, safe and reliable option for Pakistan," he claimed. The PAEC is contributing 4.9 % of the country's energy and the plan for 2030 is to get 8,000 megawatts from nuclear power, he added.

Senator Mushahid Hussain Sayed, who is the chairperson of the Senate's defence committee, said the issue of the nuclear power plants needs to be discussed because it is linked with the energy security of the country. On the criticisms over the

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construction of K-2 and K-3, Sayed recalled how some groups criticised Chashma nuclear plants when they were launched and mentioned the debates on whether or not the plants will sink or explode in an earthquake. "In our country, not taking decisions has become a national habit," he smiled. He recalled the debate on Thar coal is nearly 25 years old now and the Pak-Iran gas pipeline

has yet to start. Sayed emphasised how the nuclear power plants are the most feasible, economical and eco-friendly option with Pakistan to secure itself from the looming energy crises. All technically advanced countries are increasingly relying on nuclear power, he pointed out, adding that Japan's new government is restarting its nuclear power plants that were closed after the Fukushima incident.

According to Sayed, Rs1 billion have been spent on generating 1000MW of electricity in thermal sector. But a specific lobby in Islamabad still says the government should focus on thermal power, he said.

Meanwhile, PAEC chairperson Dr Ansar Pervez mentioned they have been running the Kanupp for the last 40 years without the assistance of a vendor and the commission produced its own fuel bundles for it. "Kanupp has never taken any subsidies from the government and is meeting its expenses," he



pointed out, adding that they are running the plant with the money it gets from K-Electric. A few members raised concerns about the Chinese involvement in the plants, to which Pervez pointed out that China is running 21 nuclear power plants and its goals for 2050 are to achieve 400,000MW from nuclear power. "We are installing ACP-1000 reactors for K-2 and K-3 that will protect them from a missile attack or a airplane crash," he said.

Pervez clarified that the power plants will not damage climate and the total radiation that the general public receives from it will be 0.3mSv per year, which is less than the radiation from other natural sources. After him, nuclear physicist Dr Shaukat Hameed Khan spoke on Pakistan's energy needs and the importance of nuclear energy. By 2030, Pakistan's energy requirements will reach 160,000MW and the exaggerated coal reservoirs will last only 14 years, he said. Meanwhile, former senator Javed Jabbar stressed on creating awareness among the people about nuclear power.

Source: <http://tribune.com.pk>, 21 February 2014.

### USA

#### Georgia Nuclear Plant Gets Federal Loan Guarantees

The US Department of Energy has formalized \$6.51 billion in federal loan guarantees for the expansion of a Georgia nuclear power plant. The federal loan guarantees are to support construction of two new nuclear reactors at the Alvin W. Vogtle Electric Generating Plant, near Waynesboro in eastern Georgia, representing the first new nuclear power project in the nation in nearly three decades. US Secretary of Energy Ernest Moniz announced the loan guarantees 19 February prior to his visit to the Vogtle facility on 20 February for a ceremony. "The construction of new nuclear power facilities like this one — which will provide carbon-free electricity to well over a million American energy consumers — is not only a major milestone in the administration's commitment to jumpstart the US nuclear power industry, it is also an important part of our all-of-the-above approach to American energy as we move toward a low-carbon energy future," Moniz said in a release.

Of the \$6.51 billion in loan guarantees, \$3.46 billion will go to Georgia Power, a subsidiary of Southern Company, and \$3.05 billion will go to Oglethorpe Power Co., a partner in the Vogtle expansion. A

federal loan worth \$1.8 billion is pending for the Municipal Electric Authority of Georgia. Vogtle's two existing nuclear reactors, with a total capacity of 2,430 megawatts, have been in operation since the late 1980s. The two new 1,100 megawatt Westinghouse AP1000 nuclear reactors for units 3 and 4 are expected to begin commercial operation in 2017 and 2018, respectively, Southern says, making Vogtle the only four-unit nuclear facility in the nation. Southern says the project will employ approximately 5,000 people during peak construction and create 800 permanent jobs once the plant begins operating.

Southern Company chief executive Fanning in a statement said the Vogtle project "is a carbon-free source of baseload generation necessary to create American energy security." "Our partnership with the DoE is an important step in moving the U.S. nuclear industry forward," Fanning said. But environmental group Friends of the Earth criticized federal support for nuclear power, citing the Fukushima nuclear power plant disaster resulting from Japan's March 2011 earthquake and tsunami, which it says "demonstrated that nuclear reactors can never be safe." "Despite the dangers nuclear reactors pose and the lack of any sustainable solutions for nuclear waste disposal, President Obama's commitment to nuclear energy succeeds only in condemning future generations to live with the fallout," said Katherine Fuchs, the group's nuclear campaigner, in a statement after the DOE's announcement of the loan guarantees.

Source: <http://www.nuclearpowerdaily.com>, 21 February 2014.

### URANIUM PRODUCTION

#### CHINA

#### China Boosts Uranium Imports

With low prevailing uranium prices for the last two years, China has ramped up uranium imports to several times its annual requirements. Its domestic uranium production meets only a quarter of present demand, and imports supplement this. In 2012 imports were 12,908 tU, and in 2013 China imported 18,968 tonnes of uranium for \$2.37 billion from five countries (Kazakhstan, Uzbekistan, Australia, Namibia and Canada). Anticipated need in 2014 is 6250 tU. As well as buying product on world markets,

the two main nuclear power companies are investing in overseas uranium mines.

Source: *World Nuclear News*, 21 February 2014.

**GENERAL**

**Paladin's Loss Grows**

A Third consecutive year of weak uranium prices has led to Paladin Energy's half year net loss increasing to \$US255 million. The uranium producer does not expect any short-term improvement either, shutting one of its two producing mines and reducing production guidance for the year. However Paladin predicts that the nuclear power industry will recover and the long-term future will be positive for uranium producers, with the current range of mine closures and lack of investment in new supply leading to sharp price rises.

Chinese giant, China National Nuclear Corporation agreed in 2013 to pay Paladin \$US190 million for a 25 per cent stake in Langer Heinrich mine in Namibia, with regulatory approval expected this year. The company's shares closed steady at 47.5 cents. Paladin's loss widened by 32 per cent from a \$US193.5 million half year loss last year. The result was inflated by a \$US226.5 million impairment on its Queensland exploration assets. Stripping those out, Paladin's gross result was a \$US29.3 million loss compared to an \$US11.3 million profit last year.

It blamed the loss on a 21 per cent fall in the uranium price and higher impairment of inventory at the loss-making Kayelekera mine in Malawi it put on care and maintenance. By the end of the year Paladin had cut its basic cost of production in the December quarter by 8.0 per cent to \$US27.50 a pound at the Langer Heinrich mine in Namibia and 24 per cent to \$US33.10 at the more costly Kayelekera.

Paladin's average realised uranium sales price for the six months was \$US38.40 a pound, compared to \$US72 at the time of the 2011 Fukushima nuclear accident that triggered shutdowns of reactors around the world. Following the decision to close

Kayelekera, Paladin has revised 2014 production guidance from 8.3-8.7 million pounds to 7.8-8.0 million pounds....

Source: <http://www.heraldsun.com.au>, 14 February 2014.

**NUCLEAR COOPERATION**

**INDIA-JAPAN**

**Japan Nuclear Deal Delay May Hit progress of India's Atomic Plants**

India wants France and the US, which are building nuclear plants in the country, to push Japan to conclude the deal at the earliest so that progress is not hampered. Progress on atomic plants being built in India by France and the US could be hampered by the delay in India's nuclear deal with Japan, where key components of these plants are manufactured. India now wants these countries to push Japan to conclude the agreement

at the earliest.

National Security Adviser Shivshankar Menon impressed upon French officials during his visit to Paris in January that France should take up the issue with Japanese PM Abe when he travels there in May 2014.... Menon told the French officials that Abe should be persuaded to fast-track the nuclear deal with India.... France is building a nuclear plant at

Jaitapur in Maharashtra and a number of its components are manufactured by companies based in Japan. Until India and Japan have a nuclear deal in place, these companies cannot provide the components for the plant. Similarly, the US is also proposing to construct a nuclear plant in Mithi Viridi in Gujarat and will require components

from Japan-based companies.

For the US and France, their companies – WestingHouse Electric Co, GE Electric and Areva – are building reactor for Indian nuclear power plants. The technology used by these companies requires equipment that could be sourced from Japan. For India, nuclear cooperation deal with France will

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open a range of avenues in the field of nuclear energy and cooperation. As the nuclear deal with Japan and India could not be signed during Japanese PM Abe's recent visit to Delhi in January 2014, sources point out that this could have an impact on the progress of two upcoming nuclear power plant projects in India.... The price per unit for the JNPP will come to more than Rs 9 in 2021, which, according to the DAE is very high. The initial capital cost for the project per MW is between Rs 27-30 crore. The cost per unit for the KKNPP unit I and II is between Rs 3.50 and Rs 4. The cost for the KKNPP III and IV is also under negotiation.

The company is building six EPR reactors, each with a capacity of 1650 MW of nuclear power for JNPP in Ratnagiri, a coastal district of Maharashtra. As of now, the project is expected to be the highest nuclear power generation plant in the country with a capacity of 9900 MW. Another project which could be hampered because of deal not getting would be the Mithi Virdhi plant in Gujarat where Westinghouse Electric Co is providing AP-1000 reactors.... This project is, however, in the initial stages and preliminary study is being conducted.

The Indo-Japan nuclear deal is stuck for various reasons. After the Fukushima Daichi plant incident in Japan, the domestic opinion about nuclear power has gone against nuclear plants. Also, Japan is wary as India has not signed the NPT and CTBT. Formal negotiations for a civil nuclear deal with Japan started in Tokyo in June 2010. These were followed by two consecutive rounds in October 2010 (Delhi) and November 2010 (Tokyo). However, India slowed the pace of negotiations in the wake of the Fukushima nuclear accident in March 2011. The last round of talks was held in November 2013.

Source: <http://www.dnaindia.com>, 16 February 2014.

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## **USA-VIETNAM**

### **Obama Approves Vietnam Nuclear Deal**

President Obama on 24 February approved a civilian nuclear pact with Vietnam which could lead to the sale of US reactors to Washington's energy-hungry former war foe. The move by the president formally opened a 90-day review process in Congress. If no legislation is passed contravening the accord, it will

then come into force. Under the accord, US officials said, Vietnam committed not to produce radioactive ingredients for nuclear weapons and signed up to US non-proliferation standards, which the White House bills as the strongest in the world. "I have determined that

the performance of the agreement will promote, and will not constitute an unreasonable risk to, the common defense and security," Obama said in a memorandum to the Energy Department.

Vietnam agreed not to enrich or reprocess uranium, key steps in the manufacture of nuclear weapons, in the deal signed on the sidelines of an East Asia summit in Brunei in October 2013. It also pledged to seek components for its fuel cycle on the open, international market. Vietnam's market for nuclear

power — already the second largest in East Asia after China — is expected to grow to \$50 billion by 2030. Vietnam faces energy shortages and is pursuing nuclear energy, officials have said, with a plan that calls for the first nuclear power plant to be in commercial

operation by 2020. It wants nuclear energy to provide more than 10 percent of its total power generation needs by 2030. The communist-ruled nation already has a nuclear cooperation agreement with Russia. Despite Hanoi's determination to pursue nuclear power, there has been domestic opposition with many voicing fears that the locations selected for the plants make them vulnerable to earthquakes or tsunamis.

Source: <http://www.nuclearpowerdaily.com>, 24 February 2014.

**President Obama on 24 February approved a civilian nuclear pact with Vietnam which could lead to the sale of US reactors to Washington's energy-hungry former war foe.**

**NUCLEAR PROLIFERATION**

**IRAN**

**Iran-West Nuclear Talks More Political Than Technical, Legal: Expert**

Nuclear talks between Iran and the P5+1 currently have a political aspect and legal and technical issues are a second priority, expert on international relations Davood Hermidas ...Senior officials from P5+1...will begin several days of talks on the nuclear issue in Vienna on 18 February 2014 with an Iranian delegation led by Foreign Minister Mohammad Javad Zarif . The upcoming talks will reportedly focus on new and advanced centrifuges as well as the Arak heavy water reactor. The negotiations are aimed at reaching a comprehensive accord on the Islamic Republic's nuclear energy programme after the two sides clinched a landmark interim deal in Geneva last November 2013.

Under the Geneva deal which was implemented on 20 January 2014, the six countries undertook to provide Iran with some sanctions relief in exchange for the country agreeing to limit certain aspects of its nuclear activities during a six-month period. Commenting on the readiness of the sides for a withdrawal from certain requests for achieving a success during the upcoming talks, Bavand said that all sides need to ensure the nuclear talks achieve success despite their problems. Iran wants to pass the sanction-related economic problems, he said, adding that the EU is also facing economic problems and entering the Iranian market would be a good opening. "US president Barack Obama hopes to resolve the issue during his administration. He is also under pressure by some entities inside the US," the expert underlined....

...On 17 February 2014, Reuters quoted a senior US official as saying the "talks between Iran and six world powers on a long term deal for Tehran to limit its nuclear program and see international sanctions lifted will be long and complicated with no guarantee of success." The expert went on to note that considering the negotiator countries' problems as well as regional issues, all sides will benefit if the Iran's nuclear issue is solved. Maybe in the future

other issues such as UNSCR will be added to the negotiations, he said, adding that "the issues such as Iran's missile system will not be discussed in the first step of the negotiations."So the first step is expected to achieve a successful result, he forecasted.... Zarif has previously stressed that the upcoming talks between Iran and the Group 5+1 would only be limited to the issues agreed in the Joint Plan of Action signed on 24 November 24 ....

*Source: <http://www.azernews.az/>, 20 February 2014.*

**NORTH KOREA**

**China has Always Promoted Korea Nuclear Solution**

China has always played a role in promoting a solution to the Korean nuclear issue, said the Chinese Foreign Ministry in response to US demands for China to play a bigger role. "China is a responsible country and has always played a part in solving nuclear deadlock, persuading all parties involved through all channels, and maintaining close communication with them," said ministry spokeswoman Hua Chunying. Hua's statement followed remarks by US Secretary of State John Kerry, who appealed to China to do more to solve the nuclear deadlock during his visit to the ROK. She told a regular press briefing that the denuclearization of the Peninsula should be discussed within the six-party talks framework, and the just and reasonable concerns of all parties, including the DPRK, should be addressed in a balanced way.

It is in all parties' interests and is their common responsibility to maintain the stability of the peninsula, the spokeswoman said. The six-party talks also involve Russia, the ROK and Japan and have aimed for denuclearization of the Korean Peninsula. The talks have been halted since late 2008. All parties involved should shoulder their own responsibilities, make constructive efforts to ease the Korean Peninsula situation, and create favorable conditions for the resumption of six-party talks, she said. Kerry arrived in Beijing from Seoul on 15 Feb morning, starting his two-day visit to China. This is his second visit to China and his fifth to Asia since he took office in February last year.

*Source: <http://www.ecns.cn/>, 15 February 2014.*

NUCLEAR NON-PROLIFERATION

JAPAN

**Beijing Calls on Tokyo to Return Plutonium to US**

China voiced “serious concern” on 17 February over Japan’s possession of weapons-grade nuclear materials, urging Tokyo to return the plutonium borrowed from the United States as soon as possible. Critics around the world have publicly questioned Japan’s nuclear strategy after Japan’s Kyodo News Agency confirmed that Washington has been pressing Tokyo since 2010 to return more than 300 kgs of mostly weapons-grade plutonium. Government sources in the US and Japan said the plutonium — given to Japan for research purposes during the Cold War era — could be used to produce 40 to 50 nuclear weapons, and since then Japan had strongly resisted returning the material.

“We believe that Japan, as a party to the NPT should strictly observe its international obligations of nuclear non-proliferation and nuclear security,” Foreign Ministry spokeswoman Hua Chunying said on 17 February. According to Kyodo, Washington planned to forge an accord with Tokyo in March 2014, on the occasion of the third NSS in the Netherlands, concerning the return of the 331 kg of plutonium now stored at the JAEA. “Over quite a long period of time, Japan has not returned the weapons-grade nuclear material it has stored to the relevant country, and this has led to concerns within the international community. The Chinese side is also greatly concerned, and hopes Tokyo will explain this matter,” Hua said.

...“These days, there are only two red lines Tokyo is not allowed to cross; first, no possession of nuclear weapons; second, drifting away from the alliance with the US and aligning itself with Asian neighbors,” Wu said. Japan’s growing plutonium stockpiles have worried nuclear technology experts worldwide.... Early in 2012, the Associated Press said in a report that “Japan still intends to reprocess spent fuel at Rokkasho. It sees few other options, even though it will mean extracting plutonium that could be used

**The three non-nuclear principles state that Japan will not produce, possess or allow the entry into its territory of nuclear weapons. They are an important part of Japan’s peaceful post-war development.**

to make nuclear weapons.” Hua said the Japan’s stock of nuclear materials raises issues regarding the risk of proliferation and the balance between supply and demand. “We also urge Japan to take tangible measures and inform the international community of its plan to resolve the imbalance of supply and demand within the country as required by the IAEA,” Hua said.

Source: <http://www.ecns.cn>, 18 February 2014.

**China Wants Non-nuclear Japan to Remain Nuke-free**

China on 17 February urged Japan to stick by the three non-nuclear principles, after Japanese officials hinted at allowing the United States to bring in nuclear weapons in emergency.

The three non-nuclear principles state that Japan will not produce, possess or allow the entry into its territory of nuclear weapons. They are an important part of Japan’s peaceful post-war development, Foreign Ministry spokeswoman Hua Chunying said. “They are also significant to regional peace and stability,” Hua told a daily news briefing. Japan may allow the US to bring nuclear weapons into the country in an emergency that threatens the safety of Japanese citizens, FM Fumio Kishida indicated on 14 February.... The three non-nuclear principles were first outlined by Prime Minister Eisaku Sato in a speech to the House of Representatives in 1967 and were approved by the parliament in 1971.

Source: <http://www.ecns.cn>, 18 February 2014.

IRAN

**Iran Nuclear Talks Resume Amid Pessimism**

Neither Iran nor the US is hopeful about talks intended to resolve a decade-old dispute over Iran’s nuclear programme. Negotiators are due to meet in Vienna to discuss Iran’s nuclear programme, a day after the country’s supreme leader said he was not optimistic about talks and that they would lead nowhere.

Representatives from the P5+1 Group, so called because it comprises the five permanent members

of the UNSC plus Germany, convene in the Austrian capital on 18 February to build on progress made in the previous round of talks in November 2013, when Tehran agreed to suspend part of its nuclear enrichment operations in exchange for an easing of sanctions. This latest round of talks is aimed at finding a long-term agreement, and the two sides have until July 2014 to find a solution.

**High Stakes:** But on 17 February, Iran's Supreme Leader Khamenei said he was pessimistic about talks, although he was not opposed to them. "I have said before ... I am not optimistic about the negotiations. It will not lead anywhere, but I am not opposed either," Khamenei said during a visit to the Iranian city of Tabriz.... "What our foreign ministry and officials have started will continue and Iran will not violate its (pledge) ... but I say again that this is of no use and will not lead anywhere," Khamenei added. A senior US official, speaking on condition of anonymity, said on 17 February that the negotiation process would be complicated, long and have no guarantee of success. "When the stakes are this high and the devil is truly in the details, one has to take the time to ensure the confidence of the international community in the result," the official said. "That can't be done in a day, a week or even a month in this situation."

**Seven-step Plan:** In early February, Iran agreed to an inspection of the Saghand uranium mine, as part of a seven-step plan with the IAEA to ease international fears about its nuclear programme. The two sides reached agreement on seven practical measures to be implemented by Iran by May 15. "There is a problem with rhetoric and there is a problem with enrichment. It's been a difficult issue since the beginning. Iran says article four of the non-proliferation treaty means it can enrich uranium in its own country, America disagrees. "When politicians and government officials speak they have internal audiences in mind. American officials have said the nuclear issue is not the only problem they have with Iran. All the sanctions that exist are going to remain even if the nuclear issue is dealt with. There are other issues they [Americans] don't like Iran for."

Source: <http://www.aljazeera.com>, 18 February 2014.

### N.KOREA

#### China Pressing to Revive N. Korea Nuclear Talks

China said 20 February 2014 it has been working hard to restart long-stalled six-nation negotiations on North Korea's nuclear program, with one of its senior diplomats set to visit South Korea this week immediately after leaving the North. The back-to-back trip by China's Vice Foreign Minister Liu Zhenmin to the two Koreas is highly unusual and believed to be part of US involved diplomacy to revive the six-party talks.... "China is committed to peace and stability, denuclearization of the Korean Peninsula," China's foreign ministry spokeswoman Hua Chunying told reporters, when asked about Liu's visit to the two Koreas. "We will continue to make positive efforts in our own way to press ahead with the resumption of the six-party talks"...

Liu's trip to North Korea came days after US Secretary of State John Kerry said in Beijing that he discussed with Chinese leaders specific ideas to revive the six-party forum that has been dormant since late 2008.... Liu's trip to South Korea is expected to be closely watched for any message he may bring from North Korea regarding its nuclear issue or inter-Korean relations. ...Liu was the most senior Chinese official to visit North Korea since the high-profile purge and execution of leader Kim Jong-un's uncle about two months ago, which stoked concern about instability in the isolated country In the Chinese statement posted on its foreign ministry's website, China said Liu has told North Korean officials that it will "never allow war or chaos" on the Korean Peninsula. North Korea, for its part, reaffirmed its willingness to denuclearize, saying that the goal is a "dying wish" of its late leader, Kim Jong-il, the father of current leader Kim Jong-un....

Source: <http://www.globalpost.com/>, 20 February 2014.

### NUCLEAR TERRORISM

#### INDONESIA

#### Indonesian Lawmakers Accept Nuclear Terrorism Convention Draft Law

The Indonesian lawmakers have agreed to accept the draft law on the International Convention for

the Suppression of Acts of Nuclear Terrorism. The agreement was reached at a hearing between FM Natalegawa and the members of the House of Representatives (DPR) Commission I overseeing security and information. The commission members promised to include the draft into the agenda of the Houses plenary session, which is scheduled to be held on February 25, where they will try to pass it as a new law.

The hearing was chaired by Deputy Chairman of the Houses Commission I Kartasmita and attended by 15 representatives from eight factions. The representatives from the Democratic Party Faction were absent, but they had informed the head of the Houses Secretariat that they agreed with the draft... According to the IAEA, the Nuclear Terrorism Convention was proposed by Russia and first adopted on April 13, 2005. The main objective of this convention is to protect against attacks on a range of targets, including nuclear power plants and reactors.

Source: <http://www.antaraneews.com>, 19 February 2014.

**NUCLEAR SAFETY**

**JAPAN**

**Japan to Lift Part of Fukushima Evacuation Order**

Japan will lift an exclusion order on an area around the crippled Fukushima nuclear plant, allowing some residents to return to live for the first time since the disaster... Over the next two years, up to 30,000 people will be allowed to return to their homes in the original exclusion zone, thrown up in a bid to protect people from the harmful effects of leaking radiation... The decision comes despite sharp divisions among residents over whether or not they should return, with many still concerned over the persistent presence of low-level radiation, despite decontamination efforts. Under government guidelines, areas are declared suitable for habitation if someone living there is exposed to a maximum of 20 millisieverts of radiation per year. Officials have

said they would like to get radiation exposure down to one millisievert a year.

The International Commission on Radiological Protection recommends a dosage limit of one millisievert per year from all sources of radiation, but says exposure to less than 100 millisieverts per year presents no statistically significant increase in cancer risk... . Once the evacuation order is lifted, people will be free to choose whether or not to return home, the official said... Nearly three years after the massive tsunami slammed into Japan, killing more than 18,000 and setting off the worst nuclear accident in a generation, around 100,000 people remain displaced because of evacuation orders...

Source: <http://www.terraily.com>, 24 February 2014.

**The decision comes despite sharp divisions among residents over whether or not they should return, with many still concerned over the persistent presence of low-level radiation, despite decontamination efforts.**

**100-Tonne Radioactive Water Leak at Fukushima: TEPCO**

A new leak of 100 tonnes of highly radioactive water has been discovered at Fukushima, the plant's operator said on 20 February after it revealed only one of nine thermometers in a crippled reactor was still working. The toxic water is no longer escaping from a storage tank on the site, said a spokesman for TEPCO, adding it was likely contained, but the news is a further blow to the company's already-battered reputation for safety. "As there is no drainage way near the leak, which is in any case far from the ocean, it is unlikely that the water has made its way into the sea," he said. The tank, one of hundreds at the site that are used to store water contaminated during the process of cooling broken reactors, sits around 700 metres (2,300 feet) from the shore...

That contamination level compares with government limits of 100 becquerels per kilogramme in food and 10 becquerels per litre in drinking water. A becquerel is a unit of radioactivity. Beta radiation, including from cancer-causing strontium-90, is potentially very harmful to humans and can cause damage to DNA. But it is relatively easy to guard



against and cannot penetrate a thin sheet of aluminium.... The tank holds water filtered to remove caesium but which still contains strontium, a substance that accumulates in bones and can cause cancer if consumed. About half of the beta radiation from the latest leak is thought to be strontium-90, TEPCO said, meaning its concentration level is nearly four million times the legal limit of 30 becquerel per litre.

Japan's Nuclear Regulation Authority said, however, it sees no serious risks to environment outside the plant at this point. The accident came a day after TEPCO announced that one of the two thermometers in the lower part of the No.2 reactor pressure vessel is out of order. There were originally nine thermometers in the vessel. TEPCO said it can still see the temperature of the area with the remaining thermometer. The device was monitoring the temperature of fuel that has been kept in "a state of cold shutdown" to prevent a self-sustaining nuclear reaction — criticality — a TEPCO spokesman said.... TEPCO poured thousands of tonnes of water onto runaway reactors to keep them cool, and continues to douse them, but has to store and clean that water in a growing number of temporary tanks at the site.

In August 2013, TEPCO said around 300 tonnes of radioactive liquid were believed to have escaped, an incident regulators said represented a level-three "serious incident" on the UN's seven-point International Nuclear Event Scale. Two months later, the Fukushima plant had another leak of radioactive water containing a cancer-causing isotope, possibly into the sea. At that time, TEPCO said a barrier intended to contain radioactive overflow was breached in one spot by water contaminated with strontium-90 at 70 times the legal limit for safe disposal.

Source: <http://www.terradaily.com>, 20 February 2014.

### USA

#### **Radiation Detected at New Mexico Nuclear Plant**

US investigators were taking samples on 17 February at a New Mexico underground nuclear waste site where airborne radiation was detected, though

authorities stressed they had found no contamination. Officials monitoring the possible radiation leak said there was no danger to people or the environment at the Department of Energy's Waste Isolation Pilot Plant, the nation's first repository to seal away radioactive waste, mostly plutonium, used for defense research and the production of nuclear weapons. The waste is dumped 2,150 feet (655 meters) underground in disposal rooms excavated in an ancient, stable salt formation.... It said no staffer was found to be contaminated by the radiation.... The agency stressed that "no contamination has been found on any equipment, personnel or facilities."

As soon as the airborne radiation was detected underground at the site WIPP's ventilation system automatically switched to filtration mode in order to prevent air exchange with the surface. Investigators have not yet identified the source of the radiation, but WIPP said the site's system of air monitors and protective filtration system "continue to function as designed." The site was shut down and not performing active operations at the time.... In early February, an underground blaze prompted the evacuation of a different part of the site, after a truck hauling salt caught fire. Several workers suffered smoke inhalation. But officials said the blaze was nowhere near radioactive material. Material dumped at the site includes plutonium-contaminated waste from the Los Alamos National Laboratory, about 300 miles (500 kgs) away, also in New Mexico.

Source: <http://www.terradaily.com>, 17 February 2014.

## NUCLEAR WASTE MANAGEMENT

### JAPAN

#### **Underground Nuclear Waste Disposal Facility Locations Difficult to Locate in Japan**

All of Japan's nuclear reactors are offline, but that is not stemming the debate about what to do with the nation's stockpile of nuclear waste. NUMO is the organization responsible for constructing the disposal facilities for nuclear waste materials. They are working to design, construct, and operate an underground storage facility nearly 4 square miles

in area, which would be operated for 50 years and monitored for 300 years after being shut down. The organization is funded by every utility in Japan which operates a nuclear power plant, who pay a fee based on how much nuclear waste each produces in a year. NUMO has been working to solicit communities across Japan which would be interested in hosting an underground repository, but has been unable to find any willing parties despite the billions of dollars in subsidies that would be awarded. This week NUMO submitted a proposal to a government-commissioned panel of experts which proposed new methods for choosing locations for burying radioactive nuclear waste.

The government panel of the Ministry of Economy, Trade and Industry is comprised of experts in seismology, volcanoes, and groundwater who have been discussing the methods of selecting sites which will host an underground nuclear waste repository. The panel approved the guidelines proposed by the Nuclear Waste Management Organization on 24 February. Not all of the experts agreed that nuclear waste could be safely stored underground and requested further discussions on the matter. Current guidelines in Japan stipulate that nuclear waste storage facilities should not be located near active geological faults, within 15 kgs of volcanoes or nuclear reactors, in areas where the ground has risen in a thousand feet in elevation in the last 100,000 years, or in locations where water could permeate. Once the guidelines have been approved the central government will use them to screen and identify candidate sites to host a future repository.

Some 70% of Japan does not meet the criteria proposed. This would greatly hinder the ability to locate host locations, because many areas have been resistant to being considered as host locations. Instead of being able to use a scientific method for selecting the best sites from a wide range of available locations it seems the Japanese

government will instead be forced to choose from a small pool of locations which meet the criteria and have a willing host prefecture. On the same day the central government denied a request by the governor of Fukushima Prefecture to introduce new legislation which would prevent Fukushima Prefecture from being a host of any final repository facilities.

Source: <http://enformable.com>, 25 February 2014.

## **USA**

### **Billions Unaccounted for in Nuclear Waste Management**

Two projects crucial to the Department of Energy's multi-billion dollar program to dispose of surplus weapons-grade plutonium have already soared \$3 billion over budget and are nowhere near completion. That's according to a report from the Government Accountability Office that reviewed the National Nuclear Security Administration's Plutonium

**Current guidelines in Japan stipulate that nuclear waste storage facilities should not be located near active geological faults, within 15 kgs of volcanoes or nuclear reactors, in areas where the ground has risen in a thousand feet in elevation in the last 100,000 years, or in locations where water could permeate.**

Disposition program, which includes constructing the Mixed Oxide Fuel Fabrication Facility that produces fuel for nuclear reactors, and the Waste Solidification Building, which disposes of liquid waste from the first facility – based in South Carolina.

The GAO said that the projects together, which were originally estimated to cost around \$4 billion, have soared to a total of \$7 billion and won't be finished for several years. The auditors blamed mismanagement at the NNSA for the significant rise in costs, and scolded the agency for not having a procedure in place to project accurate expenditures. The auditor found that the NNSA based the facility's cost estimate of a maximum of \$1.1 billion on a "distantly related uranium storage project. The NNSA is frequently featured on the GAO's annual "high risk" report, which highlights areas within the federal government that routinely experience waste, fraud, abuse and mismanagement.

"NNSA has experienced long-standing difficulties in completing major projects within cost and on

schedule," the auditors said. Another large project to replace an old uranium processing plant in Tennessee has incurred significant cost increases and experienced setbacks for years, due to similar management issues at NNSA. The GAO, which reviewed the uranium processing facility at the Y-12 National Security Complex, found that the plant was first estimated to cost about \$600 million back in 2005; but the cost has soared into the billions. An outside estimate by the US Army Corps of Engineers put the total around \$11.6 billion—nearly 19 times the original estimate, according to the Project for Government Oversight. That would make the facility

among one of the most expensive investments in nuclear weapons infrastructure since World War II. In both reports, the GAO recommended the NNSA conduct a root analysis of all projects that have experienced cost increases or delays to determine how to avoid similar situations in the future. The auditors also said the agency should be required to project expenses for the life-cycle of each project it pursues.

*Source: <http://www.thefiscaltimes.com>, 25 February 2014.*



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