Peace Now!

Volume 7 : Issue 1, March 2009 The Bulletin of the Coalition for Nuclear Disarmament & Peace

EDITORIAL

THE interregnum since the last issue, brought out in early August, has been a truly eventful one.

First of all, the spirited battle waged by the anti-nuclear peace movements, at both national and international levels, against the Indo-US Nuclear Deal, under way since July 18 2005, has suffered a decisive setback despite intermittent moments of considerable hopes. The India-specific safeguards agreement with the International Atomic Energy Agency (IAEA) has been inked in Vienna on the 2nd instant by IAEA Director General Mohamed ElBaradei and Indian Ambassador Saurabh Kumar. However, India is further to "ratify" the agreement. The clinching of the agreement with the IAEA comes in the wake of the eventual clearance by the 45-member Nuclear Suppliers Group (NSG) on September 26 last year at the culmination of two rounds of stormy and protracted deliberations, to be followed by the US President Bush signing legislation to enact the landmark US-India civilian nuclear agreement on Oct 8 2008 after due approval by the US Congress. This was further followed by the signing of the enabling framework agreement between India and the US on October 10. By now, as follow up measures, India has reportedly signed actual purchase orders for nuclear fuel supply on France's Areva (on Feb. 4) and Russia's TVEL (on Feb. 11). A draft accord has been signed with the French group Areva for supply of two to six

Contents

European Pressurised Reactors (EPR), with estimated cost four to six billion euros (5.2-7.8 billion dollars) each. Framework agreement with Russia has been signed for supply of additional nuclear reactors for the Koodankulam nuclear power plant in Tamil Nadu and with Kazakhstan for uranium. Placing of any specific commercial order (for nuclear reactors in particular) on the US companies will, however, have to cross additional, and uncertain, barriers. (Quite contrary to loud predictions made by the mainstream opposition in India.) We have carried four articles covering the issue in depth and details, from different angles, including an exclusive contribution by an internationally known scholar, Peter Custers.

On the last 26th November, Mumbai came under a gory and spectacular terrorist attack stretching over sixty hours or so. Four locations mainly, all in south Mumbai, bore the brunt of the ensuing mayhem. The event as a spectacle, with the gorgeous and iconic Taj Hotel by the seaside as the main focus, was brought live into Indian households by the electronic media adding further elements of melodrama and jingoistic hype in the cutthroat race for the TRP. As an immediate consequence not only the meeting scheduled between the visiting Pakistan Foreign Minister and his Indian counterpart got cancelled, but also the prospects of escalating armed conflicts between the two nuclear neighbours started looking too real. While the peace activists across the border joined hands for peace and sanity, international, a.k.a American, pressure helped in keeping simmering tensions contained and kept from boiling over with possible horrendous consequences. Here we have three articles dealing with the issue, its various aspects.

From December 27 to January 17, Israel carried out a brutal explicit war on the Palestinians in the Gaza Strip turning the volatile situation in the Middle East even more volatile. In the one-sided war about 1300 Palestinians got killed apart from thousands being injured and dishoused. The casualty figure on the side of Israel stands at 13. Here we carry a time-line on Israel's (not so) clandestine nuclear programme. It bears mention that Israel, like India and Pakistan, is a non-signatory to the NPT - to which 189 of total 192 members of the UN appended their signatures. (North Korea (DPRK), however, withdrew in 2003 and is currently negotiating its comeback.)

With the NPT Review Conference in 2010 coming closer, the peace movements all across the globe are for quite a while pulling up socks to push for global nuclear disarmament focussing on the upcoming event. With the removal of George W. Bush, a huge negative presence by all accounts, from the global scene and Barack Hussein Obama replacing him as the US President, hopes have been further stirred up. Here we carry a few articles/speeches (mainly) by high officials, including one by the serving chief of the IAEA, to give an idea about the changing flavour of the times.

The issue of nuclear power and the struggle against its dangerous dimensions and implications have become all the more important, and in fact urgent, in India against the backdrop of the nuclear deal materialising. But this is also very much a global issue. Here we carry the CNDP position on the issue of nuclear energy in the specific (unfolding) Indian context and also a report on global efforts towards alternative energy.

Before we conclude, on February 2, the day India and the IAEA inked the India-specific safeguards agreement; a leading activist of the CNDP - an indefatigable fighter for global and regional peace - Sri Pranab Ghosh breathed his last. Perhaps that was his ultimate protest. The 'Peace Now' deeply condoles his death and re-commits itself to carry the fight for regional and global nuclear disarmament forward on this sombre occasion.

CNDP Condoles Passing Away of Sri Pranab Ghosh

The National Co-ordination Committee of the Coalition for Nuclear Disarmament and Peace deeply condoles the passing away of a very senior and leading member of it, Sri Pranab Ghosh, better known as Prananbda.

Sri Ghosh breathed his last on the last February 2 at the age of 75 in Kolkata. He was a bachelor.

Despite his ripe age and serious physical ailments, he was actively and enthusiastically engaged with the CNDP activities from its early days even undertaking arduous journeys to far away and difficult places.

He put his sincere efforts in spreading the message of nuclear disarmament and peace and building the organistion in West Bengal. He had also been an active member of the Pakistan-India Peoples' Forum for Peace and Democracy (PIPFPD) and the President of the West Bengal chapter of the organisation for a number of years.

He was also a leading trade unionist in the telecommunication sector and had been a senior office-bearer of the National Federation of P&T Employees (NFPTE) - now National Federation of Telecom Employees - for long years.

Sri Ghosh was also a scholar of some eminence with admirable command over Urdu and Russian languages. He had visited Russia and Pakistan. Just before his expiry, he could complete translating in English a critical historical document on the Stalin regime retrieved from the Russian Archive. He also collaborated with other scholars researching Russian history, Sri Sobhanlal Datta Gupta in particular, and translated Russian documents for them.

The CNDP pays its earnest tribute to the cherished memory of the departed comrade.

A. Toward the 2010 NPT Review Conference

I. The Real Story Behind the U.S.-India Nuclear Deal*

Subrata Ghoshroy

AT about 2:30 PM on Wednesday, October 8th, President Bush signed into law H.R. 7081, the United States-India Nuclear Co-operation Approval and Non-proliferation Enhancement Act, a.k.a. the "U.S. - India nuclear deal." In attendance were Vice President Dick Cheney, Secretary of State Condoleezza Rice, who is credited as the architect of the deal, members of Congress and an array of Indian American supporters. It was the final milestone in a long road that started on July 18, 2005, when President Bush and India's Prime Minster Manmohan Singh announced the deal in a surprise joint statement. It was also a good photo op for a beleaguered president whose legacy will be an ill-conceived war and the worst economic crisis since the Great Depression.

The legislation signed by Bush is technically known as the 123 Agreement because it amends section 123 of the U.S. Atomic Energy Act of 1954, which regulates U.S. cooperation with other nations in nuclear matters and prohibits trading with states that have not signed the 1968 Non-Proliferation Treaty (NPT). Not only is India a non-signatory to the landmark treaty, it is, along with Israel and Pakistan, also in contravention of its underlying principle, having secretly developed the bomb by transferring fissile material from its civilian program.

But while the point of the legislation was ostensibly to enable India to meet its energy needs, in reality it was about much more than that. The primary motivation is the U.S. embrace of India as a strategic partner.

An important, unlikely ally

India is no small prize. A founding member of the Non-Aligned Movement and a tradi-

tional champion of "third world" countries at the U.N. and the World Trade Organization, gaining India as a collaborator rather than an adversary was not a stroke of genius by the Bush administration. It started under President Clinton, but could not be consummated because of India's nuclear tests in 1998. (Strobe Talbot, Deputy Secretary of State under Clinton, describes this in his book, Engaging India: Diplomacy, Democracy, and the Bomb.) Faced with the rapid decline of the U.S.'s global popularity in the world and desperate for a foreign policy success, getting India on our side became a "win-win" proposition for the Bush administration. But the so-called "nuclear irritant," as Bush called it, was standing in the way. It had to be removed.

The payoff was immediate. India voted twice against Iran at the International Atomic Energy Agency (IAEA). According to an article published by the Campaign Against Sanctions and Military Intervention in Iran, a former Assistant Secretary of State for International Security and Non-Proliferation, Stephen Rademaker reportedly remarked at a meeting in New Delhi in February 2007: "The best illustration of this [change in India's attitude] is the two votes India cast against Iran at the IAEA. I am the first person to admit that the votes were coerced."

Rademaker left the State Department in January 2007 to take up a "lucrative" job with Barbour, Griffith and Rogers, the firm hired by the Indian Embassy in Washington to lobby for the deal.

India's actions did not go unappreciated. While expressing his frustration with India's continued pursuit of an Iran-Pakistan-India natural gas pipeline deal in the face of U.S. opposition, at a hearing for the 123 Agreement this summer, Congressman Gary Ackerman, Chair of the House Foreign Affairs Committee's Middle East and South Asia subcommittee, called India's IAEA vote "courageous." But, he warned, he would not continue to make nice if India kept pursuing the pipeline. "Continued pursuit of the pipeline or other investments in Iran's energy sector ? will halt and potentially even roll back the progress made in bilateral relations over the last several years," he said.

As Noam Chomsky observed in a recent interview, India seems to be playing on both sides of the street. Unfortunately, it can't go on for ever.

A "strategic partnership"

That the nuclear deal was about much more than nuclear energy was evident from the title of the hearing this summer, which took place on June 25th: "More than just the 123 Agreement: The future of U.S.-Indo relations." A cursory search of the transcript for the word "Iran" found it mentioned a total of 96 times, compared with 81 for "nuclear" (with the two often mentioned in the same context). Of the three witnesses who testified before the committee, all were old State Department hands and cheerleaders for the deal. No skeptics were invited, not even for the appearance of balance.

In a report sent to Congress this September, President Bush acknowledged India's cooperation with American initiatives, referring specifically to India's votes in the IAEA: "The Government of India has taken several steps to support the U.S. and to bring Iran back into compliance with its international obligations, particularly those pertaining to its nuclear weapons program." In addition, "India has also maintained a strong public line of support for P5+1 and U.S. diplomatic efforts to resolve international concerns with Iran's nuclear program," Bush said, referring to efforts that are viewed by most of the rest of the world as coercive and discriminatory towards Iran.

For their part, high-level Indian government officials promoting the deal have also waxed enthusiastic about the transformation of the India-U.S. relations. In December 2005, then Foreign Secretary Shyam Saran, the point man for the deal, delivered a speech at the Carnegie Endowment for International Peace in Washington, D.C. titled "Transforming India-U.S. Relations: Building a Strategic Partnership." The U.S.-India deal, he said, was a "declaration" that U.S. and India were moving towards a "global partnership," based not only on "common values," but "common interests" as well. These included the "promotion of democratic values and practices," and "combating terrorism and WMD proliferation" -

- a whole-hearted embrace of the Washington consensus and evidence that, as former U.S. Ambassador Teresita Schaffer told the House Foreign Affairs Committee, Indian foreign policy has "turned around" from the days of non-alignment.

A further sign of the growing strategic partnership is the rapidly strengthening defense link between India and Israel. In the past decade, as the relationship has blossomed, Israel has stepped in as a major supplier of weapons and sophisticated military hardware to India as a surrogate, since because U.S. firms were blocked from selling to India because of remaining sanctions and also because of inevitable protests by Pakistan. Israel is now India's second largest arms supplier.

The Israel lobby was instrumental in garnering congressional support for the deal. In January this year, in an unprecedented move India launched a sophisticated Israeli satellite, the TECSAR, which could boost its intelligence gathering capabilities regarding Iran, according to the Israeli newspaper Haaretz. The satellite, manufactured by Israel Aerospace Industries (IAI), was sent into orbit from the Sriharikota Launching Range in India using an Indian rocket. According to the Jerusalem Post, the launch of the TecSar was the first launch of an Israeli satellite aboard an Indian missile and it is part of growing Indian-Israeli cooperation, which is scheduled to eventually lead to the launching of two more satellites. While Indian space officials facing criticism at home and abroad characterized the launch as a strictly commercial venture, the significance of it was not lost in Iran and elsewhere.

Alongside the joint statement, the United States and India signed a ten-year defense pact, which envisages global collaboration in multilateral operations, expanded two-way defense trade, increased opportunities for technology transfers and coproduction, increased collaboration on missile defense, "and the list goes on," said Chairman Ackerman at the hearing.

A deal "crafted with the private sector firmly in mind"

The signing of the defense pact is a clear, significant sign of where India wants to be in the future. So is India's support for the U.S.-led war in Afghanistan. But perhaps most importantly, the defense pact has opened the door for the selling of U.S. military equipment to India.

As Chomsky pointed out, Condoleezza Rice was "actually on record admitting what is truly behind this deal." Indeed, testifying before the Senate Foreign Relations Committee on April 5, 2006, the Secretary of State made it clear it was about opening a new market for American technology: "At its core, our initiative with India is not simply a government-to-government effort. It was crafted with the private sector firmly in mind." She was not just talking about the nuclear industry, which is predicting a $100 billion market in India in the next 10 or 15 years. Boeing, for example, is reportedly projecting a market of $15 billion for its own products in India over the next 10 to 15 years.

In his testimony before the House committee this summer, Stephen Cohen, a Senior Fellow at the Brookings Institute and an old India hand, said that India will be "one of the largest markets for defense equipment in the coming two decades." India's recent purchase of six C-130J aircraft -- made by Lockheed Martin -- was the "biggest ever Indian purchase of American equipment in dollar terms." The deal was worth more than one billion dollars.

Walter Andersen, a former State Department intelligence specialist who also testified, described the Indian Navy as an even more promising area for sales. With 35 ships in the works, India is now embarked on "one of the most ambitious naval building and procurement plans in the world," he said. And, he added, the U.S. -- and perhaps other U.S. allies like Japan and South Korea -- is more competitive as the "Indians have become increasingly skeptical" about the reliability of Russian naval suppliers.

A victory for lobbyists and the Bush administration

Indeed, the U.S.-India nuclear agreement is a big deal, one made possible by the United States' willingness to trample many of its own laws and principles for nonproliferation of nuclear weapons, as well as the efforts of business lobbies in the U.S. and India, which stand to profit immensely.

There were other payoffs as well. On his way back from New York immediately after the congressional vote in favor of the deal, the Indian Prime Minister stopped in Paris to sign a similar

deal with France. The deal will allow the French nuclear giant Areva to sell at least two reactors and fuel to India. As the French anti-nuclear group Sortir to Nucleare (End Nuclear Power) aptly observed: "For having helped the U.S. and India get around the rules of non-proliferation, France will be able to sell nuclear reactors to India. These are nauseating deals that endanger the future of the planet," reported AFP.

That the U.S. Senate voted 86-13 in favor of the deal is a testament to the power of such lobbying. By contrast, non-proliferation advocates -- not a homogeneous group by any means -- faced a David vs. Goliath situation. The brief debate before the House vote, however, revealed the concern among many members over the serious negative implications of the deal on the future for non-proliferation and disarmament.

On the day of the vote, Boeing and Raytheon lobbyists were reportedly out in force, talking directly to the few wavering Senators bypassing even their staffers. "It was at a very high level," said one observer. "No one talked to the staffer, they went straight to the Senator and talked about business interests." For his part Vice Presidential nominee Joe Biden had pronounced that he was "going to work like the Devil to make it happen." And he did, by bending all the congressional rules and handing a prize to the most unpopular President in recent history barely a month before the U.S. elections.

The author is a Research Associate in the Science, Technology and Society program at MIT. He directs a project to promote nuclear stability in South Asia.

**** Source: http://www.alternet.org/story/103313/ (Posted on October 17, 2008, Printed on October 18, 2008.)***

---

*II. A Secondary Role for U.S. in India's Nuclear Future**

Rama Lakshmi

FOUR months before India shocked the world by conducting underground nuclear tests in 1998, French President Jacques Chirac visited India, bringing along 100 business leaders and meeting with Indian policymakers and industrialists.

At one meeting, Chirac surprised the Indians: "He said, 'France would fully understand if India conducted nuclear tests. We will be with you,'" recalled Tarun Das, chief mentor of the Confederation of Indian Industry, a business lobby that received the French delegates.

France has a long history of working closely with India's nuclear industry, as does Russia, Das noted. But American nuclear companies have been unable to do business in India since 1974, when trade restrictions went into effect after New Delhi tested its first atomic device.

Now, a historic civilian nuclear deal between India and the United States will allow American companies to return and will lift restrictions on other countries' sales of nuclear technology and fuel to India.

France and Russia "come at the head of the queue for business contracts from the nuclear deal now," Das said. "But let us not forget it is a very, very long line behind. And Americans and others are the long line behind."

Beyond shrill political statements, climate change and proclaimed foreign policy triumphs, the nuclear energy agreement is also about business worth more than $100 billion over about two decades and potentially tens of thousands of jobs in the United States and India. American companies hope to get a sizable slice of the Indian nuclear pie and land big contracts in defense and aerospace.

The accord is on track to be approved this week by the 45-country Nuclear Suppliers Group, which governs the world's trade in nuclear materials.

But many officials and experts in both countries say that even after the political and diplomatic hurdles are cleared, contracts for U.S. companies will

not be given out immediately. The first round of contracts after the suppliers group's approval will probably go to France and Russia, they say. A delay in U.S. ratification of the agreement, a lack of liability laws in India and the disquieting memory of severed nuclear ties would probably slow things down for the Americans.

Because of a severe shortage of uranium, many of India's 17 nuclear reactors are operating at 40 percent of capacity. About 30 reactors are expected to be built by 2030 in the energy-starved country.

Nuclear experts in India and the United States say India has given informal approval to government-owned companies in Russia and France to build six to eight reactors in the near term.

"It is not right to say that France and Russia have been given the sites for reactors. But it is not wrong either," said Sudhinder Thakur, executive director of the Nuclear Power Corp. of India, a state-owned company that has a monopoly on nuclear power generation in India. "It is known that we have commenced preparatory work of land acquisition and infrastructure building at four places. We have enjoyed long-term cooperation with Russians and French."

When some American delegations asked for a similar declaration of support, India would give only verbal assurances. Such agreements with American firms would have been politically inflammatory in India because of opposition to the nuclear deal based on Cold War-era wariness toward the United States.

Meanwhile, American energy heavyweights such as General Electric are losing the critical competitive edge of time to France's Areva and Russia's Rosatom as the deal awaits ratification by the U.S. Congress. GE built and helped run India's first nuclear plant at Tarapur, near Mumbai, but pulled out in 1974.

But perhaps the biggest barrier for the Americans is the lack of clear nuclear liability laws in India in the event of an accident.

"Our nuclear industry was in the government sector until now. And we did business with other government companies in Russia and France. Decision-making, regulatory processes were not transparent at all," said V. Raghuraman, principal energy policy adviser at the Confederation of Indian Industry, which spearheaded advocacy for the deal.

American business delegations to India have repeatedly said that unless protected under liability laws, U.S. companies would find it impossible to sell reactors in India.

"American companies are always concerned about lawsuits in U.S. courts and liability issues," said Omer Brown, a lawyer working to promote a new international legal framework for nuclear incidents, called the Convention on Supplementary Compensation. "It is more of an issue for American private nuclear companies. State-owned French and Russian nuclear companies, which have sovereign immunity, can walk away and pay nothing."

The convention is meant to cover nuclear accident claims and provide a global fund to pay victims. It will activate after five or more countries, collectively having 400,000 megawatts of installed nuclear capacity, ratify it with the International Atomic Energy Agency. Four have done so -- the United States, Morocco, Argentina and Romania, with a total of 319,256 megawatts.

"Liability limitations remain very important for private sector companies operating in this area," said Karan Bhatia, a vice president for international government relations and policy at GE. In the company's view, India's ratification of the compensation convention and adoption of domestic legislation "would be the optimal way forward," Bhatia said.

Indian officials have agreed to study the proposal. But with a national election scheduled in a few months, the matter could spill over to the next government.

The volume of business opportunities for Americans is expected to swell when an Indian law prohibiting private companies from generating nuclear energy is amended. Large Indian corporations are exploring ties with U.S. and French companies to eventually secure contracts for constructing nuclear power stations and generating power, or for producing components such as generators and turbines.

But India aspires to become more than a mere market for foreign players in the nuclear

industry. The country hopes to position itself as a low-cost manufacturing hub that supplies nuclear components to the world. Officials here say they also want to provide manpower to nuclear projects and help other countries decommission and upgrade old nuclear plants.

India's traditional way of doing nuclear business is also proving to be a challenge for some American companies. Indian nuclear plants have always preferred to procure nuclear fuel, the reactor and technology from a single vendor. This model worked with the Russians and the French, because nobody else wanted to conduct nuclear trade with India.

"The Indian mind-set has to be weaned out of this practice. We are trying to convince them that it is a lot cheaper to work with more than one vendor and buy them separately," said Vijay Sazawal, director of government programs at USEC, a Maryland-based supplier of enriched uranium fuel.

But Sazawal said he would not wait until the laws are amended and mind-sets change. His company is negotiating with a French nuclear power company, EDF, for business possibilities in India.

"There is a legacy of residual distrust from three decades of technology denial by the U.S.," said K. Santhanam, a defense expert who has worked in India's nuclear program. "So in the first stage, the U.S. industry can play a sub-vendor role to French reactors or join in a consortium with French companies. After all, the French will not allow Americans to run away with the lion's share."

**** Source: http://www.washingtonpost.com/wp-dyn/content/article/2008/09/01/AR2008090102728.html***

*III. New Energy: Nuclear Deals Mushroom in India**

ON February 2, India signed an agreement with the International Atomic Energy Agency (IAEA) allowing United Nations oversight of 14 of its 22 civilian reactors by 2014. Considering the amount of brouhaha the original Indo-U.S. nuclear deal had caused -- it nearly brought down the Congress-led United Progressive Alliance (UPA) government in New Delhi -- the response was low key. "This ends 34 years of nuclear apartheid," said All India Radio. Very few people noticed.

Recent months have, however, seen a lot of action on the nuclear front. On January 26, at India's Republic Day function, the chief guest was Kazakhstan President Nursultan Nazarbayev. The Central Asian Kazakhstan, one of the independent republics of the former Soviet Union, has never been particularly high on India's radar, so the president's pride of place at the ceremonies caused some surprise. The explanation came a couple of days later when, at a press conference in Kazakh capital Almaty, Mukhtar Dzhakishev, president of Kazatomprom, the state-owned nuclear holding company, said that new Indian atomic power plants would use Kazakh uranium as fuel.

Nazarbayev's team is only one of a series of delegations that have been visiting India to seal nuclear deals. They cover a wide range both in terms of countries and offerings, from raw materials to equipment and fabrication skills. A couple of days after the IAEA deal, nuclear giant Areva of France signed an agreement with the Nuclear Power Corporation of India Ltd. (NPCIL) to provide India with six new-generation reactors. "This is just the beginning," says Anil Kakodkar, chairman of India's Atomic Energy Commission. "The deal is worth US$12.3 billion," adds NPCIL chairman and managing director S.K. Jain.

January was a hectic month. An 18-member delegation from the UK, headed by Lord Peter Mandelson, the British secretary of state for business, enterprise and regulatory reform, arrived in Delhi with executives of companies such as Rolls Royce, Urenco Enrichment, Thompson Valves and Weir Power. A Canadian delegation also visited India, led by minister of international trade Stockwell Day; it included representatives from Atomic Energy of Canada Ltd. (AECL), urani-

um supplier Cameco and SNC-Lavalin, a nuclear engineering firm. "Canadian companies are well positioned to capitalize on opportunities and to work with their Indian counterparts to meet the needs of India's civilian nuclear market," says Day. "India is very enthusiastic about using Canadian technology and resources to help build [its] nuclear energy capacity." Earlier, there had been visits from French, Japanese and Russian teams as well.

But stealing the thunder both in size and significance has been the U.S. commercial nuclear mission (which was to have visited India in December 2008, but was delayed because of the Mumbai terrorist attacks). It arrived in the country with 60 senior executives of 30 nuclear power companies. The delegation spoke to an array of Indian companies, including Tata Power, Heavy Engineering Corporation, Larsen & Toubro (L&T) and Punj Lloyd. "The robust presence here of the U.S. commercial nuclear industry, so soon after the unfortunate events in Mumbai, speaks of the commitment of our companies to partner with India in the coming nuclear renaissance," says Ted Jones, director for policy advocacy at the U.S.-India Business Council (USIBC). According to USIBC projections, Indo-U.S. nuclear cooperation could add up to US$150 billion over the next 30 years.

India can maximize its opportunity by getting some of the world's leading uranium suppliers or nuclear plant construction firms to compete with one another to offer the best terms, notes Jitendra Singh, a Wharton professor of management. "The opportunity is large, so I suspect this will happen," he says. The current economic slowdown could present India with an opportunity to negotiate long-term contracts at favorable prices and conditions to further its civilian nuclear program, according to Singh.

DONE DEALS: Some deals are in place. "We will develop long-term relationships and partnerships with industrial companies, design firms and academic institutions," Meena Mutyala, vice president of Westinghouse Electric Company told The Hindu, a national daily. The newspaper also quotes Brandon Bethards, CEO of Babcock & Wilcox Company: "We have world-class nuclear component manufacturing facilities and a strong commitment to safety, quality and performance. We recognize these are key tenets of India's nuclear programs and look forward to working with India as they begin to add more nuclear generation."

While NPCIL has taken the lead among public sector companies, L&T is racing ahead of its peers in the private sector. "L&T has signed an MoU (memorandum of understanding) with Westinghouse of the U.S. for work involving EPC (engineering, procurement, construction), manufacturing and construction activities for the AP1000 modular nuclear reactors which they intend to offer for Indian requirements," says M.V. Kotwal, L&T's senior executive vice president. "L&T has also signed an MoU with AECL of Canada. This covers the development of the Candu ACR 1000 heavy-water moderated reactor for the Indian market. Our company has been involved in discussions with other major players such as GE, Areva and Rosatom, which are likely to offer light-water reactors for the Indian nuclear program. This is because we are a potential participant covering project management, engineering, manufacturing and construction for any of the designs of nuclear reactors and can also play a cost-effective role in supplying critical nuclear equipment for projects outside India."

Kotwal says that exports are a distinct possibility. "One of the mandatory requirements for a company before it can export nuclear equipment is to have an 'N' (nuclear) stamp accreditation," he explains. "L&T is the only company in India to have been assessed and awarded both the 'N' as well as the 'NPT' (national pipe thread) stamps by ASME (American Society of Mechanical Engineers), covering design as well as manufacture. L&T can therefore supply equipment to other countries as well."

Other companies are also seeking collaborations with foreign firms, though specific agreements have not yet been announced. "HCC (Hindustan Construction Company) is well engaged in the recent development of the nuclear power

industry in India," says Vinayak Deshpande, the company's president and chief operating officer. "Having built more than 50% of India's nuclear power capacity, HCC has been a market leader in the space of civil and structural works required for containment building and other auxiliaries. As the trade is likely to expand multifold, within and outside the country, HCC has been seeking domestic and international opportunities in partnership with global players recently seen visiting India. HCC, with its strong engineering background, will also seek active participation in domain specific engineering, testing and certification areas."

Analysts have already started to identify Indian companies that could benefit from this nuclear summer of cooperation. Fenil Maru, an equity advisor at ICICI, has a laundry list that includes L&T; HCC; the public sector Bharat Heavy Engineering ("It is looking for a tie-up and has been in talks with Alstom, GE Energy, Russia's Leningrad Metal Factory and Siemens"); the public sector National Thermal Power Corporation ("It is setting up a 2,000 MW nuclear plant" to be operational by 2012-2013); Areva Transmission & Distribution, a subsidiary of Areva of France ("It is looking at a plant for uranium mining and recycling"); Alstom Projects ("The company already makes nuclear reactors and rotors"); Rolta ("The Rolta-Stone & Webster joint venture provides reactor-building technology"); Gammon ("It has undertaken turnkey construction for nuclear projects"); ABB ("It makes components for power projects"); Anil Ambani's Reliance ADAG ("It plans to invest an additional US$2.4 billion in nuclear power capacity); Crompton Greaves; Walchandnagar Industries; Siemens; and Tata Power. As is evident from this list, several multinationals already have a presence in the country through subsidiaries, which they are likely to leverage.

How large can the nuclear power business become? Today, nuclear power constitutes just 4,100 MW or 3% of the country's energy needs. According to NPCIL's Jain, by 2032, India will have to increase this to 63000 MW, at a bare minimum. This translates to 40 new reactors worth US$80 billion.

"It is premature to provide specific numbers as details of the work involved cannot be discussed with any of the foreign companies pending clearances from their respective governments," says Kotwal of L&T. "An approximate assessment of the business potential available for Indian industry could be on the order of US$1.5 billion to US$2 billion a year after a couple of years." The USIBC is more optimistic with its expectation of US$5 billion a year.

Even more optimistic is an L&T white paper, which takes a broader view. "The Indo-U.S. nuclear deal will open two-way cooperation between India and the U.S. on key technologies in the areas of defense, nuclear energy, aerospace and aviation," says the paper. "This is a business mega-opportunity of more than US$200 billion."

POLITICAL RISKS: It could reach that level if everything goes right, but chances are that plans may hit a speed-bump. The first problem is political. General elections are due in India, and a new government will be voted into office by the summer. Analysts predict that this is likely to be a coalition government supported by left-wing parties. They could jam the works since they have vowed to rework the Indo-U.S. nuclear deal. Even the opposition Bharatiya Janata Party (BJP) -- which could have a shot at forming the government -- vehemently opposed the deal when it was discussed in Parliament.

Singh says he is "puzzled by the Indian left-wing political parties." Describing their ideologies as "intellectually bankrupt," he says the best outcome would be if in the upcoming elections, the winner gets a clear majority, "so that it is possible to avoid the dysfunctional dynamics of coalition formation between partners who do not see eye to eye on many issues."

Several critics believe that future opposition to the nuclear treaty will be ineffective. "I do not think any new regime in India or the U.S. would go back on the deal," says Shivanand Kanavi, who is writing a book on India's nuclear program and is the author of Sand to Silicon, a book on the digital revolution. "Basically, the Indo-U.S. deal was the key that was necessary to open doors globally for nuclear trade with India. The bilateral deals that have been signed with

France, the U.S., Russia and Kazakhstan have proven that. The Left had objections to the deal with the U.S. but later claimed it had no problems with deals with other countries. Since then, not much has been heard from them on the subject. I do not see any post-election problem if a coalition involving the Left comes to power. The BJP had claimed that it would renegotiate the deal. But it, too, has not said much on the subject recently."

"I do not feel a reversal is likely," says Kotwal of L&T. Adds Vasant Natarajan, professor in the department of physics at the Bangalore-based Indian Institute of Science (IISc): "The current climate seems to be that being part of this nuclear clique is somehow strategic for India and I don't see any Indian government having a fundamentally different outlook. As a policy of course one can always reverse it, but once we sign some agreement to buy a reactor we can't go back on it."

NO SILVER BULLET: The second issue is that the nuclear deal is not an instant solution that will immediately increase energy supply. According to Kanavi, "The Areva agreement is just the beginning of a new project. The site has been identified as Jaitapur near Ratnagiri, on the coast of Maharashtra, but the size of the reactor, the price and the subcontracts to be outsourced to Indian companies have to be worked out. Areva has a proven design for the 1,000 MW pressurized water reactor. However, it is also touting a new 1,600 MW design. Which one NPCIL will finally choose remains to be seen. There are pros and cons for both options."

Kanavi notes that GE-Hitachi and Westinghouse are still a long way from signing any reactor supply agreements. "The reasons are twofold," he explains. "Areva and Rosatom [of Russia, which has just signed a deal for fuel supplies] are backed by sovereign guarantees on lifetime fuel supplies as well as indemnity. The U.S. companies being privately owned do not enjoy that luxury. Moreover, the 123 agreement between India and the U.S. does not give India pre-consent for reprocessing. Thus there is still work to be done by both the governments for U.S. companies to become serious players."

On another front - raw materials - the picture is clearer. "With the sanctions being lifted, there are enough low enriched uranium (LEU) suppliers for power projects," says Kanavi. "In fact, this embarrassment of riches is driving the department of Atomic Energy to think innovatively about using LEU in its pressurized heavy-water reactors, thereby achieving a high burn rate and greater power. On the whole, the worldwide downturn might give India a great opportunity to be tough negotiators for both uranium supplies as well as reactors. In the drive for job creation, we might get some very attractive financing options as well."

Whatever the immediate attractions, the opposition to nuclear power is not going to go away overnight. True, even the Leftists have seen a new light. For all the public criticism, the Left government in West Bengal, which has been ruled by the Communists for more than 30 years, wants a nuclear unit in the state. But others view nuclear energy with suspicion.

"I am not in favor of nuclear energy because it is expensive, and it also does not make a lot of sense for a country like India which does not have a large supply of uranium and other inputs," says Natarajan of IISc. "We will always be beholden to the suppliers. If they decide to turn off the tap one day, for whatever reason -- political or economic -- we will be stuck. Every country is going to look after its own interests. If the U.S. has any strategic interest in this region, it is because they want to ensure their supply of oil from the Middle East or have a counterbalance to China. Any time that India does not agree with the U.S., they will just turn off the tap. In the nuclear supply group, every country in a sense is a U.S. ally. I don't see any country which will be willing to counterbalance U.S. interests and take India's side through thick and thin. In fact, signing the Indo-U.S. deal is almost like signing a worldwide deal because everyone will toe the U.S. line."

Singh argues that it is "overly simplistic" to describe nuclear power as being expensive. "A different way of asking this question would be to factor in the total costs of thermal power from coal, for instance, by including the costs of its environmental impact," he says. "I

am confident that such a calculation will show nuclear power in a much better light." Singh further asks if India isn't "already beholden to the oil-exporting nations. The imagined alternative is a false, autarchic fantasy which has little place in today's world. Would such critics rather see India go the way of Cuba, Angola or North Korea?"

The argument that the U.S. supports India's civilian nuclear program because it wants a counterbalance to China is also misguided, according to Singh. "Why is it in India's interest to look this gift horse in the mouth? In today's geopolitical reality, with only one superpower in the world, it is in India's interests to constructively engage with the U.S. across as many fronts as make sense," even as it protects its own strategic interests. Singh favors nuclear energy also because he believes India doesn't have the option to build thermal, coal-fired power plants to cover its power deficit in the next few decades. Also, the environmental costs could be "staggering," he says.

BIG BUSINESS OR BUST: Natarajan is skeptical for other reasons, too. "I don't see it as a big business opportunity for Indian companies because we do not have an indigenous supply of raw material," he says. "India is not a big producer of uranium and that is why our main investment is around thorium, which is available in plenty in India. That is important from a long-term view. If we can develop this [thorium] cycle or something which gives us an indigenous supply of raw material, there may be a business opportunity. But as things stand now, Indian companies can at best be collaborators and do marketing. This will be like any activity where one is a local agent. I won't call it a big business opportunity." (Thorium is not being ignored, however. Infrastructure company Punj Lloyd and the U.S.-based Thorium Power signed an MoU in December to form a 50:50 joint venture to explore commercial nuclear power opportunities. The proposed investment is US$1 billion.)

India's nuclear summer is only part of a global mosaic. With crude prices shooting through the roof last year -- they have come down now -- the nuclear option is being reviewed. "Increasing global consensus is in favor of setting up nuclear power plants for energy needs, especially in view of ever-rising oil and gas prices, depletion of oil reserves, the global warming caused by traditional thermal power plants and demonstration of safe and reliable performance of nuclear plants in the past two decades," says the L&T white paper.

"There are reasons to believe that there will be a nuclear renaissance in the next couple of decades," says Kanavi. "Global warming and carbon concerns have encouraged positive attitudes regarding nuclear power. The large reactor manufacturers have started investing in manufacturing capacity once again. The Bush administration had announced certain incentives for nuclear power. Accordingly, there are 20 proposals in the U.S. However, the Obama administration's policy is yet to be spelled out. The technology has evolved incrementally in the interim. No radical new design has come up due to the slowdown after Three Mile Island and Chernobyl."

Mumbai-based business magazine Business India points out that the financial motive has been a key factor in the slowdown in nuclear energy activity. "As many as 103 nuclear power plants were built across the U.S. between 1963 and 1973, after which no new ones have been erected," says the magazine. "Grossly overbuilt on expectations of runaway energy requirements, nuclear power became uneconomical when this did not materialize, especially because of uncertain licensing procedures for investments. In the UK, too, the last nuclear power station to have been built was Sizewell B in Suffolk, erected between 1988 and 1995. But the Gordon Brown regime decided to end this 20-year hiatus by approving a new generation of reactors to help balance high carbon generating power systems. Ten nuclear stations are likely to be built, at a cost of US$2.4 billion each."

"The attitudinal change that is happening even in Europe towards nuclear power is evident from the recent decision by Sweden to order two large reactors," says Kanavi. "Sweden is one of the most environmentally conscious countries and, in a referendum, had totally ruled out nuclear power decades ago."

China has also increased its

nuclear generation targets. It currently has 11 civilian reactors with a capacity of 8.6 gigawatts (GW). The earlier plan was to bolster this by 2GW a year to reach 40GW by 2020. In March 2008, the State Energy Bureau raised the number to 50GW. In June, the China Electrical Council projected a target of 60GW. More recently, the National Energy Administration has been talking about 70GW by 2020. That plan still awaits government approval.

Such arguments fail to convince the skeptics, though. "Global interest in nuclear energy is probably because, in the short term, the greenhouse gas emission from nuclear power plants is almost negligible compared to a coal-fired plant. Global warming and greenhouse gas emission are important issues in the energy market," says Natarajan of IISc. "The long-term solution for a country like India or a continent like Africa is solar power, simply because we get so much sunlight. The developed countries are not thinking along these lines because they don't get the sunlight that we do. If we invest in solar power, we can be world leaders in this field. We should plan our future on something that we can be sure about. The sun is not going to stop shining because the political climate changes."

**** Source: http://knowledge.wharton.upenn.edu/india/article.cfm?articleid=4352 (Published on February 12, 2009.)***

IV. The US-India Nuclear Deal and Its Backside
*An Additional Critique**
Peter Custers

Introduction

This essay discusses the hazardous and wasteful implications of the US-India nuclear deal beyond its implications for the nuclear arms' race in the subcontinent. Most of the key objections against the deal that have been put forward by progressive opponents of the deal in India and internationally, have addressed the fact that it legitimizes India's status as a nuclear weapons' state, and that it will enable India to expand its production of weapons' grade plutonium. Already, India is estimated to possess a sufficient amount of plutonium for the manufacturing of at least a hundred atomic bombs. Since India reportedly has agreed to place only 14 out of its 22 civilian reactors under the IAEA's inspection regime, it is free to produce in the remaining 8 reactors another 200 kilograms of weapons' grade plutonium per year[1]. Thus, fears that the controversial deal will enhance the danger of a nuclear conflagration in South Asia appear to be well grounded, - even if we leave aside all other interrelated objections that have been raised.

In this essay, the spotlights will not be put on India's past and future plans for production of weapons' grade plutonium and nuclear bombs, but on two other major questions. For the US-India nuclear deal needs to be also and fiercely questioned with regard to its ostensible aims, i.e. the vast expansion in the production of nuclear energy. Whereas a more than 10-fold increase in generation of nuclear energy, as foreseen, may help to overcome India's rapidly growing energy needs, - the side-effects in terms of generation of nuclear waste are so ponderous, that from this perspective too, implementation of the deal needs to be pre-empted. Moreover, as reported briefly in India's national press in September last, when the signing of the deal was being debated, - there is a little discussed 'backside' to the nuclear deal, being the US's additional commercial objectives. For the US is poised to lobby aggressively, so as to capture a larger share of India's arms' imports than it has held up until now.

The conceptual approach proposed so as to address these combined issued, is a holistic view on waste. Whereas 'social' waste and 'non-commodity' waste are rarely juxtaposed in public debate, - the US nuclear deal and its backside offer an occasion to do precisely this. For

as the below cited data on the generation of waste in the nuclear production chain show, - the US-India nuclear deal is bound to result in huge quantities and extremely dangerous waste, which cannot be sold on the market but needs to be put aside, at great risks to humans and our environment. Again, the importation of expensive armament systems entails the waste of vast economic resources that could be used towards relieving India's persistent mass poverty, hence should be considered importation of social waste. Moreover, the issues regarding generation of 'social' and 'non-commodity' waste can also be posed in relation to the manufacturing of weapons' grade plutonium and atomic weapons; this will help strengthen principled opposition against the recently signed deal[2].

The Nuclear Deal Importation of Nuclear Technology and Importation of US Armament Systems

As starting point for my discussion I will take two newspaper articles published in the Times of India on September 11 last. One of these highlighted the business prospects of the US-India nuclear deal via the sale of nuclear production technology, and via the importation and the construction of nuclear reactors in India. The second article discussed the aspiration of the US in terms of expanded exports of armament systems to India. To take the article on plans for expansion of nuclear energy production first, - it spoke very glowingly about the size of business that will be generated, mentioning a figure of 40 Billion US Dollars worth of orders Indian and foreign enterprises stand to receive, and hailing the deal as a 'project' having a financial size of Rupees 2.4 lakh crore. Under the deal, a reported 24 light-water reactors will be imported from abroad and installed along India's coasts (!). India plans to build a further 12 indigenous nuclear plants, consisting of pressurized heavy water reactors. At no point in the article are the implications of the nuclear deal in terms of generation of additional nuclear waste discussed[3]!

In another article published in the Times of India on the very same day, the secondary objectives of the US, which traditionally is not a major seller of military hardware to India, are described. The article delineates the huge size of India's overall arms' imports. It states that since the Kargil conflict, India has spent a 'whopping' $ 25 Billion on imports of weaponry. The country is 'poised' to spend another $ 30 Billion on such purchases over the next 5-6 years (!). Thus, the US is vying to capture a whole series of arms' orders which India intends to place on the world market for arms. Indian import plans reportedly include a $ 170 million plan for the buying of anti-ship Harpoon missiles, a Rs 42.000 Crore project for the purchase of multi-role combat aircraft, and purchases of 197 light utility and observation helicopters worth another Rs 3.000 Crore. A deal mentioned that has already been clinched, and has been sent for approval to the US Congress, is the arms' deal - described as India's 'biggest ever' with the US - for the purchase of 8 Boeing reconnaissance aircraft, estimated to cost no less than Rs. 8.500 Crore. At no point in the article is it explained that such lavish spending on arms' imports represents a form of social waste, and that the same financial resources could well be spent on alleviating the massive poverty that still exists in India[4].

Officially, of course, the US-India nuclear deal and the listed plans to import armaments are no interconnected issues. The arms' purchases do not directly form part of the agreement surrounding importation of nuclear technology. And yet it is probably correct to see the US's hopes to overtake other foreign suppliers of arms to India as a backside of the nuclear deal, as is indeed hinted at in the article of the Times of India. In any case, juxtaposition of the two issues enables us to look more holistically at the wasteful implications of the Indian government's behaviour, than a focus on the US-India nuclear deal alone would allow us to do. Hence, below I am going to address both the generation of nuclear waste that will occur in consequence of the nuclear deal, and India's arms' imports, in order to show the full extent of waste creation that is involved.

The Generation of Hazardous Waste in the Nuclear Production Chain

Let's take the issue of nuclear

waste generation first. I do not possess comprehensive data on the nuclear waste that has been generated by nuclear production in India so far. Nor am I in a position to give a precise assessment regarding the waste that importation and construction of new reactors will result in. However, the experience of nuclear production worldwide is unequivocal: nuclear waste emerges at each and every link in the nuclear production chain, starting from the very first stage, i.e. that of uranium mining and milling, and lasting up to the stage where nuclear fuel elements are treated in reprocessing facilities. An important source for my own understanding of these issues is the book 'Nuclear Wastelands', written by a group of scientists led by the US-based Indian academician Arjun Makhijani, which book primarily reviews waste generation by nuclear-military production facilities[5]. From this and other sources, I have selected three cases of waste generation, namely: the waste tailings that emerge after uranium is mined and milled; the depreciated fuel elements which themselves are a form of nuclear waste; and the high-level waste that needs to be put aside when former nuclear fuel elements are reprocessed.

Uranium mining is, of course, the very first stage in the whole nuclear production chain. As known, such mining is also undertaken in India, and would likely be intensified in consequence of the US-India nuclear deal. When uranium ore is mined and uranium is prepared and enriched, towards employment as raw material for making nuclear fuel elements, a truly huge amount hazardous material in the form of mill tailings is left behind, - tailings which do contain radioactive substances and are therefore hazardous for humans and for nature. Speaking in volume terms, these tailings reportedly constitute 95 percent of all the nuclear waste that is generated in the nuclear production chain. Among the radioactive substances found in the mill tailings are for instance radium-226 and thorium-230, which latter radioactive element has a half-life of 76 thousand years, meaning that it will take that many years before half of the radioactivity contained in the thorium will have decayed. By mining uranium and by creating the tailings, capitalist entrepreneurs are not just burdening our children and grand children with the consequences of uranium extraction, but future generations for an almost indefinite period of time to come. The damaging consequences of uranium mining have been recorded well in the US, where nuclear production historically started. Here, tailing dams have turned into slurry after downpours of rain. Between 1955 and 1977 a total of fifteen tailing dams have broken. In one such case, the river Rio Puerco was flooded with 94 million gallons of tailing liquids, resulting in the contamination of a long stretch of the river[6].

Another stage in the nuclear production chain known to generate dangerous waste, is the stage where nuclear energy is produced in reactors. Surely, the production of nuclear energy can be seen as a contribution to human welfare, if purely looked at from the perspective of energy generation. Yet the hazardous implications from employment of the nuclear fuel rods in the reactors are multifarious. A section of the rods needs to be taken out regularly, as the nuclear fuel elements can be utilized for only three years. Now in the parlance of economic theory the fuel elements once taken out are considered 'depreciated means of production'. They simply have lost all the value that has been transferred to the new commodity, the nuclear energy. Yet the fuel elements undoubtedly are a form of hazardous waste. Speaking in quantitative terms, the size of this waste seems small. Yet the radioactivity contained in the spent fuel elements is truly intense. The radioactive elements present in this nuclear waste include uranium, strontium-90, caesium-137 and plutonium. Of these, plutonium is entirely the outcome of human production; as such it does not exist in nature. It is known to be the very most toxic substance on earth, its half-life being exceedingly long. The half-life of plutonium-239 is 24.400 years, that of plutonium-242 as much as 380.000 years. Even micro-gram quantities of plutonium, when inhaled by humans, are known to result in fatal cancers[7]. Hence, the expansion in construction and utilisation of nuclear reactors worldwide is a reason for grave concerns. Each additional nuclear reactor generates spent nuclear fuel rods containing various forms of high-

level waste.

The third distinct stage in the chain of nuclear production I wish to refer to, is the stage of reprocessing. For decades, policymakers in the West have tried to make the public believe that they had solved the above-sketched issue of dangerous waste, i.e. the issue of spent fuel elements. They did so by arguing that these fuel rods can well be reprocessed, i.e. they may be treated chemically in reprocessing facilities so as to re-use the uranium and use the fresh plutonium for ´productive´ ends, towards the manufacturing of new fuel elements. Yet it is at the stage of reprocessing that problems really pile up. First, it is at this stage that high-level waste comes into existence as a distinct category of waste, since the chemical treatment of the fuel rods does not only help to separate out uranium and plutonium, but also results in high-level waste elements that need to be put aside. The latter counts for uranium-236, to be distinguished from uranium-235, incorporated in the fuel elements. Uranium-236, mind you, has a half-life of 24.2 million years. Again, there is the radioactive element jodium-129 which has a half-life of 15.7 million years. These are time-scales which as humans we can hardly visualise, but which make the consequences of nuclear production that much graver. The high-level waste in liquid form put aside after the chemical treatment of the fuel rods is commonly stored in tanks.

Now, the risks involved in such storage can be visualized through the accidents that have taken place in nuclear-military production facilities in both the US and the former Soviet Union. The Hanford nuclear complex in the US is the complex where the US used to manufacture its military plutonium. Here, high-level waste in liquid form was stored in 117 stainless steel tanks, each containing half a million gallons of waste. In 1973, a leakage was discovered which had caused a massive dissipation of radioactivity into Hanford's subsoil[8]. But the most dramatic example of an accident with high level radioactive waste has been reported from the former Soviet Union. In the Cheliabinsk complex, a military-nuclear complex located in the Ural mountains, a tank explosion took place in 1957. The government of the USSR suppressed the news of the accident in name of guarding 'state secrets', but Soviet scientists unravelled the accident long before the Gorbachev government instituted an enquiry. Just as in Hanford, the high-level waste from the reprocessing in Cheliabinsk was stored in stainless steel tanks, located in a canyon-shaped area 8 meters under the soil's surface. Yet the explosion in Cheliabinsk's tanks resulted in a massive leakage of radioactivity. A reported 22 million curies of radio-activity were released, 2 million curies in the form of a plume that reached a height of one kilometre above the Cheliabinsk complex. The explosion and the releases of radioactivity destroyed entire eco-systems in the surrounding region. Villages had to be evacuated, rivers and lakes were polluted, and the government had to take draconian measures to contain the danger of the accident for the region's ecology[9].

Above I have simply summarized data on selected aspects of nuclear waste generation, focusing on waste tailings from uranium mining and milling, on the waste represented by spent nuclear fuel elements, and on the high-level waste that is put aside whenever nuclear fuel rods are reprocessed. Surely, given the risks they represent for humans and for nature surrounding us, there is no way one can belittle the occurrence of multiple wastes in the nuclear production chain. Nor can one deny the validity of posing the consequences of the US-India nuclear deal in these terms.

India as Importer of Weapons Systems - The Question of Disparate Exchange

I will now turn to the second form of waste I have spoken of at the beginning of this lecture, namely of waste in the social sense of the term. As said, here I will focus on the backside of the US-India nuclear deal which is the US's eagerness to expand its arms' sales to India. In this context it is worth recalling the fact that India today heads the list of Southern importers of armament systems. Whereas in the past this position was held by the Middle Eastern oil giant Saudi Arabia, - India has meanwhile displaced the latter country as leading Southern importer, along with China. This may be

illustrated with concrete figures. According to a report brought out by the US-based Congressional Research Service (CRS), in 2005 India ranked first among developing nations weapons' purchasers, in terms of the value of the agreements signed to import weaponry. Further, whereas the total value of Southern arms' imports in this year was $ 30 Billion, the value of the agreements concluded by India alone was $ 5.4 Billion, meaning that India was set to swallow fully one sixth of the arms' total![10]. While these data could be biased, they are in fact corroborated by data which have been compiled by the respectable Stockholm based peace research institute SIPRI. In its 2007 annual report, SIPRI offers comprehensive figures for the value of arms' imports by individual Southern states over a period of 30 years. Again, India heads the list of these totals. This of course does not imply that India has been the leading Southern importer in each and every year. But it does signify that the accumulated arms' imports of India decade have been so big over the last as to make up for the comparatively 'smaller' size of arms' imports in earlier decades[11].

Now, the role which arms' transfers between North and South hold in the world economy can be assessed from either a Southern or a Northern perspective. If looked at from a Southern perspective, one has to reflect on India's arms' imports in terms of disparate exchange. The term disparate exchange heralds the fact that Southern economies, when importing armament systems from the North, are losers. Whereas they import military commodities which from a social point of view should be considered waste, - the Northern states which export the armaments are benefactors, for they directly or indirectly transfer the arms in exchange for raw materials, semi-finished goods and labour-intensive commodities representing wealth[12]. To highlight the imperialist nature of this trading mechanism, it needs to be stated that the given trading mechanism was historically instituted by the United States. For when OPEC's oil-exporting countries in the 1970s decided to take their fate in their own hands, by insisting on the right to fix the international price of crude oil, the US immediately tried to take advantage of the change. It knew of course that increased prices of oil would inter alia result in additional dollar incomes for members of OPEC[13]. Hence it feverishly worked to channel such Southern income towards additional imports of weapon systems from the US and other Northern arms' exporters, and with success[14]. Leading oil exporters, such as Saudi Arabia and Iran, in the seventies were easily deluded into buying expensive fighter planes and other arms. These Middle Eastern countries then clearly headed the list of Southern importers of weapons' systems. Today, when India has emerged as a leading Southern arms' importer, the US is dying to expand its arms' sales to India, at the expense of the country's traditional suppliers of arms[15]. And whereas it needs to be assessed whether the exports of social waste from the US towards India will be undertaken at the expense of wealth belonging to India's own population, or rather at the expense of wealth belonging to the people of India and other Southern states combined, - the arms' transfers are bound to represent further cases of disparate exchange.

India's massive imports of armament systems can, however, also be analyzed from a Northern perspective. Here we have to understand the fact that the hegemonic power in the world system, ever since the days of British imperialism, has used its leverage as dominant power to export weaponry as a part of macro-economic policymaking. This is true in particular for the presently tottering hegemonic power, the US. Ever since the sixties of the previous century, the US has used its exports of armament systems as a replacement mechanism and as supplement, to ensure that American armament corporations at all times are supplied with orders sufficient in amount to protect their production capacity and guarantee accumulation. For instance, when the US government at the end of the 1980s needed to partly scale down the size of its orders towards monopoly corporations based in the US military sector, - it heavily pushed for expanded exports. It even employed the second Gulf war staged in 1991 towards this end. Moreover, the US's Ministry of Defence, the

Pentagon, itself embraces the economic logic behind armament exports. This is evident, for instance, from statements contained in its 2006 report to the US Congress, the Annual Industrial Capability Report (AICR). As the report states, ´Defence exports play an important economic role in strengthening the US defence industrial base'; 'about 20 percent (sic) of US weapons systems items are exported…'; and 'sales to foreign customers have frequently been critical to keeping entire production lines open…'[16]. Hence, it is difficult to interpret these sales as necessitated by the US's 'security', when the US Pentagon itself admits to the US Congress that the exports of armament systems represent a key leverage for macro-economic policymaking. The combined historical evidence for the past several decades indicates that exports play an active role towards solving dilemmas in connection with the US's business cycle, driven as it largely is by military allocations.

Conclusions: Juxtaposing Social Waste and Non-Commodity Waste

I will keep my conclusions brief. I have suggested above that the US-India nuclear deal should be analyzed from a holistic perspective, in terms of the wasteful implications which the deal is set to have in two ways. If strictly looked at from a perspective of expanded production of nuclear energy in India, as is the official line of the Indian government, - the deal already needs to be severely criticized. For it will undoubtedly result in vastly increased generation of nuclear waste, which from the standpoint of economic theory is to be considered non-commodity waste. Above, I have not presented specific data on the waste which India's own production of nuclear energy has generated in the past, but have concentrated on international data regarding the generation of waste at three stages in the nuclear production chain, i.e. the stage of uranium mining and milling, the stage of production in nuclear reactors, and the stage of reprocessing of nuclear fuel elements. These general data unequivocally bring out that in assessing the implications of the US-India nuclear deal, the issue of nuclear waste needs to be taken on board.

Yet if we are to assess the full extent of waste generation implied by the US-India nuclear deal, we also need to reflect on the backside of the deal. There needs to be, it seems, greater awareness of the fact that the US does not just intend to use the deal to promote the export of nuclear production technology towards India. The US also is keenly interested in greatly expanding its sales of armaments to India, in view of the fact that India is one of the global South's leading arms' importers, along with China. Here again, my data regarding the loss of wealth implied by these deals for India and the South are incomplete. Thus, further research on Indian armament imports should bring out how they express disparate exchange. They may lead to loss of wealth for the people of India alone - or ultimate lead to replication of disparate exchange via parallel exports of conventional arms by India to other countries of the global South. In any case, such research would have to focus on the precise way in which foreign currency towards payment of these imports is generated. In order to make a holistic assessment of the US-India nuclear deal and the mentioned arms' deals, we need to juxtapose 'non-commodity' waste and 'social' waste.

The author is an affiliated researcher of the International Institute for Asian Studies (I.I.A.S.), Leiden, Netherlands, and the author of 'Questioning Globalized Militarism. Nuclear and Military Production and Critical Economic Theory' (Tulika Publishers, New Delhi, India, 2007). He can be contacted at antimil@hotmail.com. Website: www.petercusters.nl

**** Revised text of a lecture given at the Jawaharlal Nehru University (JNU), New Delhi, on September the 17th, 2008.***

References:

1. See e.g. Praful Bidwai, 'Manmohan's False Nuclear Move' (19 July, 2008 - www.cndp.org/); also Zia Mian and M.V.Ramana, 'Going MAD: Ten Years of the Bomb in South Asia" (July 29, 2008 - www.cndp.org/);
2. For a full discussion, see Peter Custers, Questioning Globalized Militarism. Nuclear and Military Production and Critical Economic

Theory (Tulika Publishers, New Delhi, India, 2007);

3. Srinivas Laxman, 'N-Trade: It's a $ 40 Billion Opportunity' (Times of India, New Delhi, September 11, 2008, p.15); for other estimates regarding the business prospects of the deal, see J.Sri Raman, 'How India's 'Waiver' Has Won' (September 9, 2008 - www.cndp.org/);
4. Rajat Pandit, 'In Defence, US Wants to be India's Partner No.1' (Times of India, New Delhi, September 11, 2008, p.13);
5. Arjun Makhijani, Howard Hu and Katherine Yih (eds.), Nuclear Wastelands: A Global Guide to Nuclear Weapons Production and its Health and Environmental Effects (MIT Press, Cambridge, Massachusetts, USA, 1995);
6. Katherine Yih, Albert Donnay, Annalee Yassi, A.James Ruttenber and Scott Saleska, ´Úranium Mining and Milling for Military Purposes´ , in Arjun Makhijani, Howard Hu and Katherine Yih (1995), op.cit., p.121;
7. For details on the health and environmental hazards of plutonium production and use, see notably Frank Barnaby, Nuclear Legacy: Democracy in a Plutonium Economy (Cornerhouse Briefing Paper No.2, Sturminster, Newton, United Kingdom, November 1997);
8. see on the leakages of nuclear waste at the Hanford complex, see for instance Arjun Makhijani and Scott Saleska, ´The Production of Nuclear Weapons and Environmental Hazards´ (in Arjun Makhijani, Howard Hu and Katherine Yih (1995), op.cit., p.44);
9. on the Cheliabinsk catastrophe, see for instance Zhores Medvedev, Nuclear Disaster in the Urals (Vintage Books, London, United Kingdom, 1980); also Arjun Makhijani, Howard Hu and Katherine Yih (1995), op.cit., p.335;
10. Richard Grimmett, 'Conventional Arms Transfers to Developing Nations, 1998-2005' (Congressional Research Service (CRS), The Library of Congress, Washington, USA, October 23, 2006);
11. for Sipri´s most recent data, see Paul Holtom, Mark Bromley and Pieter D.Wezeman, ´International Arms Transfers´ (Chapter 7 of the SIPRI Yearbook 2008: Armaments, Disarmament and International Security, Stockholm, Sweden, 2008, p.293);
12. An exposition regarding the trading mechanism of disparate exchange between North and South is stated in Peter Custers (2007), op.cit., Part Three, Chapter Nineteen: ´Unequal Exchange versus Disparate Exchange. A Theoretical Comparison. Succession and Coexistence of Two Imperialist Trading Mechanisms´ (p.309);
13. For the views of US State Department officials regarding the implications of the historical price increases decided upon by OPEC in 1973, see Pierre Terzian, OPEC: The Inside Story (Zed Books, London, 1985);
14. See e.g. Anthony Sampson, The Arms Bazaar (Hodder & Stoughton, London, 1977); and Russell Warren Howe, Weapons. The Shattering Truth About the International Game of Power, Money and Arms (Abacus, London, 1980);
15. For India's primary dependence on arms´ supplies from Russia, see e.g. Paul Holtom, Mark Bromley and Pieter D.Wezeman (2008), op.cit., p.300;
16. Office of the Undersecretary of Defence, Annual Industrial Capability Report (A.I.C.R. - (US Pentagon, Washington D.C., USA, February, 2006).

B. Indo-Pak Relations

I. Next Terror Strike: Endgame for India and Pakistan

Mazher Hussain

Current Canvas

Cries of war are once again vitiating the atmosphere in both India and Pakistan. The governments, the media and the opinion makers are contributing to the hype and increasing the hysteria by the day. There is also silence. But this silence is from the peace activists on both sides of the border- an unfortunate silence and inaction from that very same section of society that should have been the most vocal and proactive in these times of madness and mayhem.

In fact, many people, especially in India, who are known

votaries of conflict mitigation and have dedicated most of their lives to promote peace are also talking of keeping "all options" open! That they are disappointed enough to support cries for action that could also lead to a war between India and Pakistan is just a sign of the very difficult times that we have come to be in. If even activists working in the areas of peace and harmony have become so pessimistic and see strong and unilateral actions alone as the way out, what could be the thinking and the mindset of the common people who are being battered by the constant hate hype in the media -and in such circumstances could war be far behind?

Of course the response of the Pakistan establishment post Mumbai terror attack leaves much to be desired. Any person, especially in India, is aghast and extremely exasperated by the constant flip flop and the denial mode of the Pakistan establishment in all matters regarding the Mumbai terror attack and the acceptance of the presence of terror groups and suspects on the Pakistan territory. Even more frustrating is the apparent unwillingness or inability of Pakistan government to stop or deal with such terror groups. This seems to be resulting in a growing sense of public outrage in India - propelling the Indian government to adopt a hard and aggressive stance, especially in view of the forthcoming general elections scheduled in April 2009.

It is also true that there are more terror attacks and suicide bombings taking place in Pakistan then in India. And most of the times, it is the very same forces that are behind the terror attacks both in Pakistan and in India. The people of India know this. The people of Pakistan know this. Even if the Pakistani establishment keeps denying this to the point of absurdity and the government of India drives itself into a frenzy trying to make Pakistan Government "accept and confess".

History proves that people can be swayed and misled by political jingoism and media hype to welcome wars at their own eventual peril. Two examples: Germany under Hitler and US under Bush - where "advanced civilizations" were led into wars that ultimately proved disastrous for every one and more so for these very same countries. One can never find solutions through war or conflicts. The challenge is to find solutions to wars and conflicts.

Given the traumatic experience of partition, three and a half wars fought in the last 60 years, the festering Kashmir problem and allegations by both countries that the other side is supporting civil strife, insurgencies and terror strikes in their country have succeeded in making people of both India and Pakistan suspicious and antagonistic towards each other. In such a situation, neither the politicians nor the media will have to work over time to take both the countries to war. But when media and politicians in both the countries have started creating hype and hysteria, then it will not be long before war would be accepted by all - including responsible citizens and civil society groups - as an option for consideration.

War Scenarios

Indian government could engage in precision strikes to destroy terror camps within Pakistan territory. US is already doing this and is only succeeding in generating more sympathy for the terror groups and hatred for itself.. Even though the Pakistan Government is making some cosmetic protests it has not confronted or countered any of the intrusions into its territory by US. If India is to undertake similar intrusions into Pakistani territory, then no Pakistan government can last beyond a day if it does not retaliate to the Indian intrusion. And any retaliation in the present situation could only conclude in a full scale war.

If there is a full scale war between India and Pakistan there appear to be four possible scenarios:

a) **Scenario I:** The conflict ends in a nuclear holocaust destroying most of the subcontinent and long term consequences for planet earth.

b) **Scenario II:** Some how the Indian government prevents a nuclear holocaust, wins the war and takes control of Pakistan- just like America took control of Afghanistan or Iraq. Terrorism will not disappear but will acquire additional support from resistance that will naturally

spring up against the occupying forces. And the legitimacy of resistance will make the entire population stand against the occupier. Threat of violence will no longer be from isolated fanatic groups but from the entire populace. Lessons from the ongoing American misadventures in Afghanistan and Iraq are too obvious to be ignored.

c) **Scenario III:** India causes considerable damage to Pakistan, does not occupy any territory but succeeds in over throwing the government that is unable to contain terror groups. Pakistan is already a very weak state with a democratic government just about in place. After a war, Pakistan would become weaker with an even weaker government - taking the country into a downward spiral of lawlessness and emergence of many more groups espousing terror and violence. In such a scenario, whether the threat of violence to India from terror groups will increase or decrease is for any one to see.

d) **Scenario IV:** The Governments of India and Pakistan start a fight but international pressure forces them to disengage. There are no winners but certainly both would pay a price and being smaller of the two, Pakistan would stand to suffer more damage economically and politically, resulting in a weakening of the state and strengthening of lawless and terror groups with long term and disastrous consequences for India also.

Other Possibilities

The international community, including India, knows that apart from the elected government there are multiple power centers in Pakistan. They also know that the elected government is weak and despite its best intensions lacks sovereign control over its own military, intelligence outfits and large parts of its very own territory that seems to be under the sway of fanatic groups and terror outfits. The only effective and long term solution in such a scenario would be to strengthen the elected government to improve and increase its authority to a level that would make the government of Pakistan willing and capable of controlling all other players to effectively usher in a law abiding environment and violence free society.

The best pressure and support for action for any government could be from its own people. If the people of Pakistan could assert their will and express their disapproval for the terror outfits with as much consistency and fervour as they did to bring about the ouster of the regime of General Musharaf, then this would strengthen the government and provide legitimacy to its actions and all other centres of power that seem to be operating autonomously will have to eventually fall in line. Actions by any government purely from external pressures could make it look like a puppet regime and undermine its legitimacy and become counter productive.

But the will of the people of Pakistan has been suppressed and violated for most of the last 60 years (with active support and connivance of the international community) and it cannot be expected to find its voice and its force within 60 days. It may require careful nurturing and long support before it can come into its own and the sooner this fact is recognized, the better it will be for all concerned.

Of course, the strengthening of the democratic will of the people of Pakistan should also be accompanied with pressure, along with support, from the international community on the Pakistan establishment. But international pressure does not mean and should not degenerate into immediate threats of war.

The Immanent Threat

But given the war frenzy into which both India and Pakistan seem to have propelled themselves within weeks of the Mumbai terror attack, imagine what would happen if another terrorist attack is unleashed on India in the immediate future and before both the countries are able to scale down the prevailing war hysteria and return back to non combative positions? Will the government of India be able to still continue with benign war rhetoric even in this election year and after so much extreme posturing from both sides or will it be compelled to launch at least some retaliatory strikes that could develop into a full scale war?

We have already seen that

any conflict between India and Pakistan at this juncture could only mean advantage terrorism. In such a situation one should not be surprised if there is another terror strike on India in the very near future- that could actually trigger a war that nobody really wants - except of course the terrorists.

Just one more terror strike by 5 to 10 deranged fanatics and two nations- both products of the most ancient and glorious civilization - could be destroyed. What a comment on the wisdom and sagacity of the human race of the 21st Century!

The author is Executive Director, COVA 20-4-10, Charminar, Hyderabad and a National Coordination Committee (NCC) member of the CNDP.

II. South Asian Prisoner's Dilemma of Disarmament

Rabia Akhtar

PAKISTAN has always been at the forefront of criticism where issues of nuclear proliferation and weaponisation are concerned but very seldom has the international community credited Pakistan for its commitment to nuclear non proliferation and the initiatives introduced in the South Asian region. Now that Pakistan's President Asif Ali Zardari has created vibes on the prospects of a 'non-nuclear treaty' in South Asia, it is pertinent to relive history for the benefit of all those, who are applauding his initiative as something which should have been a reality by now. But wishful thinking seldom does it and moreover, NWFZ in South Asia is no longer an exclusive-unilateral dream.

Pakistan's journey into the world of peaceful civilian nuclear energy started with the creation of Pakistan Atomic Energy Commission (PAEC) in 1956 to participate in Eisenhower's Atoms for Peace Program. It was in 1957 that Pakistan supported the proposal of Non Proliferation Treaty (NPT) proposed by Ireland. This proposal was later on adopted by UNGA in 1965 as the 'Irish Resolution'. Following the creation of IAEA in 1957, Pakistan voluntarily submitted its civilian nuclear facilities for international inspections in 1959. In 1968 when India opposed the NPT in the UNGA as 'discriminatory', Pakistan supported it. After having proposed the idea of NWFZ in South Asia in 1972, Pakistan floated a formal proposal for the establishment of a SANWFZ in 1974 after India conducted its first nuclear test in the same year. During the decade of 1960s leading up to the Indian PNE of 1974, Pakistan had been warning the international community of Indian diversion of nuclear fuel from the Canadian supplied nuclear reactor to India which was solely meant for the purpose of civilian nuclear energy production. For all those years, Pakistan's warnings at various forums remained unheeded to and when in 1974, India produced a plutonium device and tested it, for Pakistan then it did not matter whether it was a PNE-it remained a plain simple act of active proliferation which was not acceptable.

Pakistan's proposal of SANWFZ presented in UNGA in 1974 resulted in UNGA Resolution 3265 endorsing the creation of NWFZ in South Asia. It called for the South Asian states to enter into consultations for negotiating such a zone and also urging the states to refrain taking actions which would be in contradiction to the objectives of the resolution. India raised several objections to the SANWFZ resolution and called in question the 'appropriateness' of the South Asian region to be a region of NWFZ because of the outside presence of nuclear weapons which belonged to 'outside powers'. Pakistan however maintained its position suggesting that SANWFZ will serve to be a step towards general disarmament eventually. The presence of nuclear weapons in the Indian Ocean Region (IOR) however remained a concern raised by the Indians as a point of objection against the Pakistani proposal of NWFZ in South Asia but for Pakistan, during the Cold War, the only comfort came from the Chinese negative security assurances of no nuclear use against non nuclear states. Moreover, a

US presence in the IOR against the Indian and Soviet threatening presence also provided a subtle comfort for Pakistan as a factor of stability and security in the region.

Therefore while the Indians wanted an Indian Ocean Zone of Peace, Pakistan maintained its position on a specific SANWFZ-which it reiterated time and again to be its right to propose as a South Asian country. Pakistan has always pursued the idea of nuclear non proliferation aggressively at the international and regional levels because it understood that solutions to its security dilemma could only be found in a region where India abandoned its ambitions of nuclear hegemony. Therefore, the goal of nuclear disarmament which was global and a regime of nuclear non proliferation which was universal had little appeal for Pakistan as a state which was threatened by its immediate neighbor. Although Pakistan's proposal to create a SANWFZ was rejected over and over again by its neighboring South Asian states, it still continued pursuing an arms control and non proliferation agenda whereby in 1993 it supported a US-South Asian Missile Non-proliferation Initiative along with a proposal for Zero-Missile Zone in South Asia and also supported the Comprehensive Test Ban Treaty in 1996.

Moreover, in 1996, Pakistan proposed a multilateral conference on peace and security in South Asia before the UNGA to 'remove the underlying causes of conflict and tensions between India and Pakistan, including Kashmir; to conclude agreements on conventional arms control and confidence-building measures including mutually agreed force ratios and measures to avoid surprise attack; and to undertake measures for nuclear restraint, avoidance of nuclear weapons proliferation, and non-development or development of nuclear-capable missiles'. Unfortunately, Pakistan's efforts were met with a series of second Indian tests in May 1998-thus reinforcing the security dilemma Pakistan had been living since long.

Ten years later, both India and Pakistan have reached a point where new beginnings need to be sought but not at the cost of reliving the horrors of rejection--when Pakistan unilaterally proposed various credible non proliferation and disarmament initiatives thinking that the world would pay attention. Today when India proudly reminisces Rajiv Gandhi's Plan of Action for 'a world free of nuclear weapons'-at the heart of which was the commitment to eliminate all nuclear weapons in three stages by 2010 (as proposed by Rajiv Gandhi in 1988)--Pakistan would only want India to commit to a Strategic Restraint Regime in SA; commit to Nuclear Risk Reduction Measures in SA; commit to its commitment to NFU in letter and spirit and not through hedged 'first strike' options as enshrined in its doctrine; commit to 'minimum' deterrence posture; commit to upholding its moratorium on nuclear testing (which post Indo-US nuclear deal has become the biggest worry of the international non-proliferation community); commit to a ballistic missile defense free zone in SA (which has every possibility of destabilizing the present crisis and deterrence stability in the region). Is this too much to ask? It is not a story of the past ten years of overt nuclearisation-it is our entire history which has been riffed with wars, conflicts, crisis and misperceptions. India's continuous refusal to accept Pakistan-led proposals and initiatives on non proliferation, arms control and disarmament over a period of years on various international and regional forums have been sufficient to create the atmosphere of distrust between the two states which constitutes the prisoner's dilemma of disarmament in the South Asian region. And while the renewed prospects of a 'non-nuclear treaty' in South Asia need to be hailed, the international community should pursue India aggressively to put its best foot forward-because it takes two to Tango.

The author is Chair, Department Defense and Diplomatic Studies at Fatima Jinnah Women University, Rawalpindi Pakistan.

*III. Mystery of an Indian Missile Test Flop**

J. Sri Raman

ON January 20, 2009, a cruise missile test, which India's security establishment had billed as crucial, failed. It did so in a curious manner, though the cause of the failure is yet to be officially announced.

The questions raised by the failure may appear to be only technical at first glance. They, however, can serve to highlight a military trade war between far-off powers fueling a missile race in South Asia.

The $2.7 million BrahMos missile had been tested several times before, but the last month's exercise was supposed to be a considerable leap forward. It tested a nuclear-capable version of the missile performing an advanced mission - hitting a predetermined, hidden target. The flight was a success, but the missile missed the target.

The missile, with a range of 290 kilometers, was to hit "an insignificant target" hidden among "obstructions" in the Pokharan test range (the arid desert site in the poverty-stricken State of Rajasthan, where the nuclear-weapon tests of May 1998 were conducted). The missile, a product of Russian-Indian collaboration, failed the test because of not any flaw in the trajectory but an inexplicable non-functioning of US satellites.

Interestingly, India's Defense Research and Development Organization (DRDO) first declared the test a success. The claim was hastily withdrawn when Gen. Deepak Kapoor, chief of army staff of the Indian Army, insisted on visiting the target site in person. His finding was that the missile had overshot the target by a kilometer, and the failure was formally announced.

General Kapoor went on to let the media know that the army might call off the BrahMos deal. The proposal for purchase of 240 of the missiles for two regiments of the army, he indicated, was to be shelved until the missile's capability was proven.

The BrahMos has been developed as a joint venture between the DRDO of India and the Federal State Unitary Enterprise NPO Mashinostroyenia (NPOM) of Russia under BrahMos Aerospace. The missile is named after two major rivers, the Brahmaputra of India and the Moskva of Russia. Tests have continued for over four years now, but the missile has never won unreserved acceptance despite being peddled as an important component of an ambitious missile program.

The surface-hugging, supersonic cruise missile can, unlike a ballistic missile, evade radar detection and avoids the dangers of soaring into space and reentering the atmosphere. Though it can hit land-based targets, it is designed primarily as an anti-ship missile. Flying at a speed of Mach 2.8 (roughly that many times t

A device called the seeker helps the missile detect "insignificant" targets through heat or radiation. The seeker had functioned successfully during the earlier tests of BrahMos. Flummoxed experts could not explain the failure, until they discovered that "US satellites (on which the missile depended totally) blinked during the test window, thereby denying the missile the crucial inputs needed for its guidance," as one report put it. With the space guides strangely allowing themselves a shut-eye, the global positioning system (GPS) of the eight-meter, 3,000-kilogram missile could not steer it to the target.

An inquiry was immediately ordered into why satellites went on an instant strike. The probe report was to be submitted to Defense Minister A. K. Antony on Wednesday, February 4, but it has not been made public so far. The test, the country was told, would be repeated on February 20, but no official confidence has been expressed about its outcome.

Conspiracy theories may be unwarranted but, in such matters, corporate warfare can hardly be ruled out.

Russia has been a major seller of military equipment to India, inheriting the role from the Soviet Union. In recent years, however, its reliability as a supplier has been questioned, especially in sections of media

that staunchly support a "strategic partnership" with the US. The BrahMos deal has come in for particularly bitter criticism.

Cruise missiles, on the other hand, are supposed to have become more popular with the militarists of India after their wide use in Iraq and Afghanistan. The US forces, recall these backers of George Bush's "war on terror," fired nearly 1,000 such missiles when they first entered Iraq for its lethal "liberation."

The missile offers to India from the US military-industrial complex in the recent period have been many, and they have been received well in the corporate-controlled media and military-linked think-tanks.

In April 2007, India was offered one of the most advanced, shipboard US missile defense systems, capable of tracking and neutralizing up to 100 attacking missiles. At that time, the sales pitch was that the Aegis system could be integrated with the BrahMos as well as other Indian missiles. The lobbying firm was unofficially identified as Lockheed Martin.

In September 2008, India was offered a $170 million deal for two dozen Harpoon air-to-ground, anti-ship missiles. The next month brought the proposal for a bigger deal - for an unspecified number of "smart missiles" or sensor fused weapons (SFWs) for $375 million. The missile was sought to be marketed as one "designed to accurately detect and defeat a wide range of moving and stationary land and maritime target threats with minimal collateral damage" - a claim that victims and witnesses of the war on Iraq may not vouch for. The Texton Systems Corporation of Massachusetts was mentioned as the main contractor.

All this talk of profitable corporate contributions to the "strategic partnership" could not but have caused concern in India's neighborhood, and Pakistan did not take long to respond in kind. On January 8, 2009, the Pakistan Navy announced its purchase of 120 C-602 long-range. anti-ship cruise missiles (with active seekers) from China to counter the threat from India. The missile race in South Asia can be expected to heat up further in the foreseeable future.

The astronomical costs of the accelerated race are not stopping the buyers and sellers of BrahMos and mass-murder weapons of other brands. They may evince no interest in another piece of statistics about India and Pakistan: in neither country does per-capita income exceed three dollars a day, even according to fudged official figures.

The author is a freelance journalist and also a member of the NCC, CNDP. He is the author of "Flashpoint" (Common Courage Press, USA).

**** Source: http://www.truthout.org/020609B (Posted on February 06 2009.)***

C. Middle-East Turmoil

*Israel: Nuclear Time Line**

1949: French and Israel atomic researchers start to exchange information. Israeli Defence Force Science Corps begins two year geological survey of the Negev desert in search of recoverable Uranium.

1952: Israeli Atomic Energy Commission is created. Its chairman, Ernst David Bergmann of Israel's Weizman Institute of Science, "the father of Israel's bomb," has been promoting nuclear armed missiles for Israel since arriving after World War II. Newly elected President Eisenhower will refuse to sell arms to Israel during his two terms, ending in 1960. France sells them to Israel from 1955 to 1967.

1955: Under Atoms for Peace program, overseen by pro-Israel Lewis Stauss who was head of America's Atomic Energy Commission, U.S. helps fund a small Israeli nuclear research reactor. Strauss learned about

Dimona and its purpose before the U.S. government but did not inform the U.S. government.

1953: Israeli researchers perfect a process for extracting Uranium, and developing a new method of producing heavy water, which is a key ingredient in the process. Hundreds of millions of dollars will be raised to build Israel's nuclear bomb over the next twenty years, mostly from American Jews; effort is led by Abraham Feinberg who financially backs both Presidents Truman and Johnson, as well as presidential candidate Adlai Stevenson. (John F. Kennedy accepts his money but is incensed by the pro-Israel lobbying.)

1956: France and Israel formally and secretly agree to build a nuclear reactor in the Negev desert. Britain, France and Israel invade Egypt (Suez Canal crisis) and the Soviet Union threatens to use rockets against them if they do not desist, leading to a cease-fire. U.S. begins U-2 spy flights over targets world wide, including Israel.

1957: France and Israel sign a revised agreement calling for France to build a 24 MWt reactor; unwritten was the agreement to build a plutonium reprocessing plant.

1958: Israel breaks ground at Dimona, with assistance of French scientists and contractors, and U-2 spy planes provide evidence Israelis are building nuclear plant there.

1960: Israeli scientists witness first French atomic explosion in South Pacific. French President Charles DeGaulle threatens to cut off reactor fuel if Israel doesn't accept international inspections, but eventually accepts Israel's assertions Dimona is only for peaceful purposes and work continues. United States intelligence leaks to the press that Israel is building a secret nuclear facility that will eventually produce a nuclear bomb. Israel admits this to its Parliament and world but claims it is only for peaceful purposes.

1961: President Kennedy makes the man who leaked Israel's bomb to the press head of the CIA. Kennedy is very opposed to Israel having the bomb and tells Israeli Prime Minister Ben-Gurion so in many letters and in meeting in New York about the purpose of Dimona. Ben-Gurion tells him its purpose is peaceful and refuses to allow international inspections. Israel launches its first rocket.

1962: Ben-Gurion allows inspections by American inspectors only in return for sales of Hawk surface-to-air missiles. Israel builds a fake control room and bricks off parts of buildings to hide from inspectors the true size and purpose of the reactor (three times bigger than admitted) and that it was connected to a plutonium reprocessing plant; this feint continues during seven such inspections until they end in 1969. Reactor at Dimona goes into operation.

1963: Kennedy refuses to sign any security arrangement with Israel. After Kennedy assassination brings the very pro-Israel Lyndon Johnson to power. (Not surprisingly there is an assassination conspiracy theory that the Mossad killed Kennedy.)

1964: Dimona plutonium processing plant goes online. In first official visit by an Israeli Prime Minister (Eshkol) to Washington, Johnson promises Israel offensive fighter jets and other weapons if it refrains from producing nuclear weapons. Israel's Eshkol eventually agrees to Johnson's terms and holds off on producing the bomb for a few years. China explodes first nuclear bomb.

1965: Israel performs its first plutonium extraction, and France assists Israel in developing its Jericho missiles.

1966: U.S. begins fighter jet and arms shipments to Israel. Johnson discourages further reports on Israel nuclear situation from U.S. embassy in Israel. Israel refuses money for nuclear desalination plant which is tied to international inspections of Dimona.

1967: Six Day War when Israel pre-emptively attacks an Egyptian military buildup in the Sinai Peninsula. Israel attacks USS Liberty surveillance vessel, killing 34 sailors; (see BBC allegation below that Israelis wanted to instigate a U.S. nuclear attack on Cairo). Soviet Union supports Arabs militarily, sends ships to the region and breaks diplomatic ties with Israel.

Americans unofficially inform Israel that the Soviet Union has put four Israeli cities on its nuclear target list.

1968: Defense Minister Moshe Dayan, believing Israel cannot depend on the U.S. to defend it, unilaterally orders full production of nuclear weapons, averaging four to twelve per year, depending on size. Israel illicitly imports two hundred tons of uranium.

1969: President Richard Nixon takes office and fully supports Israel's nuclear weapons, as does his National Security chief Henry Kissinger. Ends American inspections at Dimona and shares some nuclear targeting information about the Soviet Union. CIA tries to inform President Johnson about Dimona, but he brushes off information, signs Nonproliferation Treaty, and sends Israel advanced Phantom fighter jets.

1973: Israelis catch Soviet spy ring in high levels of Israeli government and make it clear to Soviets they have produced "suitcase nukes" they could sneak into Russia. Egypt and Syria attack unprepared Israeli forces in Sinai and Golan Heights on the Jewish fast in Yom Kippur War. Israel goes on nuclear alert and begins to ready nuclear weapons for actual use, forcing the U.S. to airlift them weapons and to start redeploying nuclear armed ships and airplanes. When Soviets started talking about sending in Russian troops, Israel again goes on nuclear alert. Washington pressures Israel to accept a ceasefire.

1974: Defense Minister Dayan visits South Africa to discuss testing a nuclear weapon there.

1975: Israel receives nuclear-capable Lance missiles from the United States, even as U.S. remains in official denial about Israel having nuclear weapons.

1976: South Africa's Prime Minister visits Israel to sign several nuclear and other agreements.

1977: Menachem Begin's right wing expansionist Likud Party takes power in Israel and is determined with reshape Middle East to suit Israel's needs, including through using the nuclear threat. Commits to nuclear targeting of even more cities in the Soviet Union. President Carter does not take on the issue, despite conducting Camp David peace talks between Egypt and Israel.

1979: President Carter provides Israel ability to see American spy satellite photos for defense purposes only, but Israelis manage to get them for pre-emptive strikes against Middle East and Russia. Israel and South Africa explode first nuclear bomb in South Indian Ocean but appointed U.S. committee refuses to conclude it was a nuclear explosion.

1981: Israel, using U.S. spy satellite photos, sends F-16s to bomb and destroy Iraqi nuclear reactor under construction at Osirak. U.S. strictly limits further access to spy photos. Defense Minister Ariel Sharon recruits American Navy employee Jonathan Pollard as a spy to obtain satellite photos plus massive amounts of other classified information about Israel's enemies, some of which Israel turns over to the Soviet Union to try to win over its adversary. Ariel Sharon talks President Reagan into a formal Israel-U.S. military alliance against the Soviet Union but Defense Chief Weinberger delays and sabotages it.

1982: Under Ariel Sharon's military leadership, Israel invades Lebanon to attack Palestinian militants as first part of plan to drive Palestinians into Jordan, using the threat of nuclear weapons to intimidate any adversaries. However, despite destroying Beruit and killing more than ten thousand Arabs and 500 Israelis, Sharon's efforts in Lebanon fail. Israel eventually withdraws and Sharon loses his position.

1985: Jonathan Pollard captured leaving office with stolen papers. Eventually sentenced to life in prison.

1986: Mordechai Vanunu, a disaffected Dimona technician who left with photographs and other evidence of nuclear weapons production, publishes details in the London Sunday Times newspaper; reveals Israel has over 100 nuclear weapons. Israel starts disinformation campaign then lures him to Italy where he is kidnaped, taken to Israel and

imprisoned for 18 years. He was released in spring of 2004 and remains under house arrest because of his continuing contact with the media.

1987: Israel test-fires a Jericho 2 missile capable of carrying a nulcear weapon. UN General Assembly and the IAEA General Conference passes first of more than a dozen resolutions calling on Israel to join the Nonproliferation Treaty.
1988: Israel launches its first spy satellite into orbit.

1991: U.S. convinces Israel to refrain from attacking Iraq with nuclear weapons, even if Iraq uses chemical or biological weapons against it, but Israel's nuclear weapons remain on alert.

1999: US Department of Energy document ranks Israel sixth among countries with nuclear weapons.

2000: Knesset debates Israel's nuclear weapons program for first time. Germany sells Israel three state-of-the-art 800-class Dolphin submarines and Israel tests first submarine-launched missile in the area of the Indian Ocean. Ariel Sharon is elected Prime Minister of Israel, still intending to use nuclear weapons to bully other nations and remake the Middle East for the benefit of Israel. George Bush is elected in the United state and his neoconservative allies fully intend that the United States help Sharon fulfill that mission. Right wing Israelis begin freely talking about attacking other nations, including with nuclear weapons.

2001: Bush inflames Arabs by clearly taking sides with Israel's expansionist aims, part of the reason for the September 11 attacks against the Pentagon and the World Trade Center. He obsesses about attacking Iraq, not defending America against known Al Queda terrorists. Starts planning war against Iraq after September 11 attacks, including option of using nuclear weapons.
2002: George Bush gives Israel the go-ahead to use nuclear weapons against Iraq if Saddam attacks Israel before the American invasion of Iraq. Pentagon Office of Special Plans uses information from Iraqi dissidents and Israel's Mossad to convince Americans that Iraq has weapons of mass destruction that are an imminent threat against America. Israel launches Ofek-5 satellite with a powerful new inter-continental missile.

2003: Israel repeatedly demands sanctions against Iran for its nuclear program and threatens to bomb Iran's operating nuclear power plant, despite Iran's threats to retaliate hard against Israel. Russia may have sold Iran additional advanced missiles capable of shooting down Israeli bomber and fighter jets. Russian President Putin proposes Security Council formally call for establishment of a Palestinian state and arrests last of the Jewish "oligarchs" who bought state industries for pennies on the dollar under Yeltsin. Arab and other nations repeatedly ask that Israel nuclear facilities come under international inspections. So does the head of the International Atomic Energy Agency (IAEA) Mohammed el-Baradei. United Nations General Assembly passes resolution that Israel join the nonproliferation treaty by a vote of 164-4. Prime Minister Ariel Sharon tells Israeli newspaper that Israel will not dismantle its "special measures" because the U.S. will not remain in the Middle East forever.

2004: Israel buys two more German submarines for delivering nuclear tipped cruise missiles, making a total of five. Mordechai Vanunu's prison term ending spring 2004.

Source: http://www.carol-moore.net/nuclearwar/israelithreats.html

D. Global Nuclear Disarmament

I. A Recipe for Survival *

Mohamed ElBaradei

AFTER two mostly wasted decades since the end of the Cold War, nuclear disarmament is again high on the international agenda.

President Obama has pledged to seek a world free of nuclear weapons - a legal commitment under the Non-Proliferation Treaty - and, as a first step, to negotiate further cuts in nuclear stockpiles with Russia. These two countries combined hold 95 percent of the world's nuclear arsenal.

Former statesmen are getting together to demand the scrapping of all nuclear weapons. After eight years in which arms control was not a priority for the United States, the fog has lifted. The challenge now is how to ensure that this new enthusiasm does not fizzle out.

The change of heart has been motivated not just by idealism but by a sober realization that the risk of nuclear weapons being used is increasing significantly.

Next time, the culprit could well be a terrorist group for whom the concept of deterrence, which helped the world until now to escape a nuclear Armageddon, is irrelevant.

The nonproliferation regime is starting to come apart at the seams. Sensitive technology thought to be the preserve of a few advanced countries has recently been acquired with alarming ease by others. Possession of nuclear weapons is still seen as conferring prestige and providing an insurance policy against attack, as Iraq and North Korea seem to demonstrate.

Nuclear weapon states, which between them have some 27,000 warheads, reinforce this message by modernizing their nuclear arsenals. To make matters worse, countries that master uranium enrichment can have a bomb within months if they so decide.

Fortunately, there is now an emerging consensus on what could and should be done:

- Bring the Comprehensive Test Ban Treaty into force and ban the development of new nuclear weapons;
- Initiate negotiations on a verifiable Fissile Material Cut-Off Treaty that would ban the production of material for nuclear weapons;
- Negotiate a successor for the START treaty between Russia and the United States, which expires this year, containing significant, verifiable cuts in their nuclear warheads. An initial target could be to cut to 1,000 or even 500 warheads on each side;
- Extend the warning time for possible nuclear attack. As an insane relic of the Cold War, Russian and United States leaders may have no more than 30 minutes to respond to an apparent attack that could be the result of computer error or unauthorized use;
- Develop a mechanism to put all facilities for enriching uranium and reprocessing plutonium under multinational control. This would give countries guaranteed supplies of fuel for peaceful nuclear power but not access to the material needed to build a weapon;
- Give the International Atomic Energy Agency sufficient legal authority, technological capabilities and resources to credibly verify the disarmament process and to ensure that non-nuclear-weapon states use nuclear energy exclusively for peaceful purposes. The IAEA and the Security Council together must be able to effectively deter, detect and respond to possible proliferation cheats;
- Radically improve the physical security of nuclear materials.

Recent statements by the Obama administration give us hope that some of these measures can be adopted quickly. However, the deep-rooted causes of the insecurity that have plagued the world for decades

need to be addressed simultaneously if durable security is to be attained.

First, poverty and inequality. The links between poverty, repression and injustice, on the one hand, and extremism and violence, on the other, are clear for all to see. We must learn to value all human life equally. Developed countries - quick to react when the lives of their own citizens are at stake - give the clear impression that they do not really care about the lives of the world's poor.

Second, festering conflicts. The Middle East, home to the world's most perilous and intractable conflict, will never be at peace until the Palestinian question is resolved. What compounds the problem is that the nuclear nonproliferation regime has lost its legitimacy in the eyes of Arab public opinion because of the perceived double-standards concerning Israel, the only state in the region outside the NPT and known to possess nuclear weapons.

Iraq and Libya are unlikely to be the last countries in the Middle East to be tempted to acquire nuclear weapons. Concerns about current and future nuclear programs in the region will persist until a lasting peace is achieved and all nuclear weapons in the area are eliminated as part of a regional security structure. The Obama administration's pledge to engage in direct diplomacy with Iran, without preconditions and on the basis of mutual respect, and to seek a grand bargain, is long overdue.

Third, the weakness of international institutions. The most pressing threats facing the world, such as weapons of mass destruction, terrorism, the global financial crisis and climate change, can only be addressed through collaborative global action.

For that we need multilateral institutions. We must overcome the cynicism that has too often characterized government attitudes to the UN. The UN and related agencies must be given adequate authority and funding and put in the hands of leaders who have vision, courage and credibility.

Above all, we need to halt the glaring breach of core principles of international law such as limitations on the unilateral use of force, proportionality in self-defense and the protection of civilians during hostilities in order to avoid a repeat of the civilian carnage in Iraq and, most recently, in Gaza.

A convincing response to these challenges requires a new system of security. The Security Council, often paralyzed and with its authority dwindling due to frequent discord, needs to be reformed to reflect the world of today and not of 1945. It should have a robust and well defined peacekeeping capability to prevent the massacre of innocent millions in places like Congo, Rwanda and Darfur. The Council should be systematically engaged in preventing and resolving conflicts, addressing root causes and not just symptoms.

Nuclear disarmament is key to our very survival. We now have another chance to create a saner, safer world by working to eliminate the nuclear sword of Damocles that hangs over all our heads. Let us not waste this opportunity.

The author is the Director General of the International Atomic Energy Agency.

**** Source: http://www.iht.com/articles/2009/02/16/opinion/edelbaradei.php***

Published in the International Herald Tribune on Feb. 16 2009.

*II. Lifting the Nuclear Shadow **

David Miliband

THANK you very much and I'll use this occasion to say a word about your a debate that I think is maturing very fast and a debate that goes to the heart of our future as, as a planet, and as people. And I was reading that when you first came in to public service, you were thrust in to not exactly the middle of the Cuban missile crisis, but at least in the debates around the Cuban missile crisis. And then throughout your career, ultimately as Permanent

Secretary at the MoD you displayed a really outstanding commitment to public service, but also to a pursuit of real analysis, real fact and the fact that you've then used your years of retirement to move in to some very interesting work around the ethics of the issues that we're discussing, not just the policy details, I think speaks precisely to that spirit and I feel very, very honoured and privileged to be able to be here with you to discuss this pamphlet and the ideas (indistinct).

There is no more evocative image for any of us than the mushroom cloud. Anyone who grew up in the 1980s as I did will remember that as the generation of the 1960s saw this as a defining issue and again in the 1980s and the question that is at the heart of the pamphlet that we're publishing. The debate that I think is taking off internationally and I'll say a word about the discussions that I had yesterday with Secretary Clinton, with National Security Advisor Jones as well, a debate that I think is going to be given new impetus by the Obama administration, is that it raises absolutely fundamental questions about safety and security in a world whose dimensions has changed profoundly since the Cold War for which many of the current doctrines were developed and on which much current thinking depends.

I want to start with something that John F Kennedy reflected on in the early 1960s when he started talking about the Non Proliferation Treaty, because as I've got in to this issue over the last eighteen months or two years, it struck me as particularly important and significant. What President Kennedy said in the early 1960s was that by 1980, 1990 (indistinct) feared that there would be forty or fifty countries in the world with the scientific know how and the wealth to have a nuclear weapon. And he said that was a very, very dangerous prospect. It was a recipe for instability and actually for war.

And his conception of the Non Proliferation Treaty was that it should provide a bulwark against that sort of race, the ultimate arms' race. And I think that it's important therefore, in that context to recognise the successes of the Non Proliferation Treaty. I don't know if I'd go as far as to say it's the most successful international Treaty that has been developed. But it has been signally successful in averting the development that President Kennedy feared.

And I'd almost say it's almost been too successful because they came, there was a period I think in the 1990s when people almost came to a view that the nuclear debate was over. In my view what was ended by the end of the Cold War was the debate between multilateral disarmament and unilateral disarmament. What was not resolved is how you make multilateral disarmament work. And I think that's at the heart of the questions that we are talking about today because of course multilateral disarmament is the flip side.

But I think we should, as we have this debate, try and learn the lessons of the Non Proliferation Treaty. The context in which we do so is one of serious (indistinct) actually, but also significant opportunity. The threat is obvious, that more people and more countries are seeking the ultimate weapon and that in the case of North Korea people will know about the critical stage of the six party talks at the moment, and in respect of the Iranian nuclear programme the other present (indistinct) non proliferation regime, the engagement of the Obama administration in the multi (indistinct) E3 plus three and what the IAEA have shown about the progress that Iran has made in respect of its nuclear, uranium enrichment programme, mean that we're at a very critical moment. But we're also at a moment of opportunity and I suppose that every foreign policy speech by any Foreign Minister anywhere in the world at the moment says that the Obama administration creates an opportunity. But in this case it's true.

Let me just quote what President Obama said. He said 'new direction in nuclear weapons policy and show the world that America believes in its existing commitment under the Nuclear Non Proliferation Treaty to work ultimately to eliminate all nuclear arms'. That is a very radical statement for a new President of the United States to say. It's significant that President Sarkozy speaking on behalf of the European Union, but also as the President of France, a nuclear power, should have the opportunity (indistinct)

safer world, one in which it's possible to meet all the objectives that are enshrined in the NPT.

And that of course builds on the quite remarkable series of essays done by George Shultz, Henry Kissinger and others and that are being taken forward in institutes like the IISS. And I do pay tribute to the work that's being done in this institute which has taken the boldness of the idea and taken it seriously enough to think how we would we actually do it. And so the disarmament programme that's been led, that has been led from (indistinct) is now at the heart of an international debate that I think is getting in to the guts of these issues in a very, very serious way.

And what we are trying to do today, I think I should make clear is (indistinct) that debate with a very specific purpose in mind. And that purpose is not policy, it's a different purpose. Henry Kissinger once said that an idea born in the heads of a few and carried in the hearts of none has no chance of success. He was talking about foreign policy. And I think that applies to this issue perhaps above all others. It's an issue where there's a great temptation for it to be kept in the heads of the few, but actually the ethic (indistinct) say to me that it's a paramount issue where you actually want more debate, rather than less.

And that's why we're using this issue to launch this Foreign Office document which is an attempt to try and engage in a wider public debate than usually happens, especially on this issue. And the goals are important. I just want to refer you back to those two quotations from President Obama and from President Sarkozy. All the goals of the Non Proliferation Treaty, those three goals at the heart of the (indistinct) disarmament, to work for non proliferation and to work for the safe use of nuclear power are the three foundation stones of our policy on this and when people say isn't it wildly radical to, for President Obama or for the British Government to a world without nuclear weapons it's often quite startling when you say to people well actually that's what signing the Non Proliferation Treaty enjoins you to do. And sometimes people don't read the treaties that they quote and I think it's important that we in this case do.

What we sketch out in the, in the document is, is what we believe are the six key steps that are necessary (indistinct) the goal of a world without nuclear weapons, but to begin to create the conditions for that goal to be seriously engaged. And I'll just run through them briefly and then we'll have a chance for wider discussions.

The first is to prevent proliferation. That speaks directly to the nuclear issue of the moment. I think it is very welcome indeed that the United States should be seeking to enter the multilateral debate about the Iranian nuclear programme and also discussing its own bilateral engagement with the Iranian Government. I think that we have said for a long time that this is a vital issue, not just for the Middle East ,which has more than enough problems without a nuclear arms race, but also for the global integrity of the Non Proliferation Treaty and so I think it's right that we put at the heart and at the start of our approach the need to counter proliferation.

Second issue which is important because there are important links here, the growth of civilian nuclear power seems to me to be essential to meet not just the energy needs, but the climate change requirements that countries (indistinct) but that expansion of civilian nuclear power needs to be done according what I would call the gold standard of safety and security. And I think that the way in which countries like the UAE have pursued their own civilian nuclear power programme with the utmost transparency, the utmost determination to meet the higher standards of safety and security and the utmost determination to work with international bodies is a very, very important signal of the way things should proceed in the future.

A third area is the need and the benefit of the United States and Russia re-engaging to achieve dramatic cuts in their own nuclear stockpiles. You will have seen the commitments of President Obama in this area, not leas with the people he's appointing to key posts. (Indistinct) in the public debate that figures like eighty per cent are being, eighty per cent reduction are being bandied around. It's in the public debate that a thousand warheads seems like a

round number. These are very, very dramatic changes that I think are very, very welcome and I very much hope that they will be taken forward.

The fourth area is something that we've talked about for a long time in this country and I think have become a bit blasé about and that is the Comprehensive Test Ban Treaty. I believe that (indistinct) been stuck on the Comprehensive Test Ban Treaty for quite a lot time, has, has really sapped the hope from many people who are committed to this agenda. I think that the reinvigoration of the Comprehensive Test Ban Treaty through the commitment of the Obama administration in this respect is very, very significant and suffice to say that when our Chinese visitors were in London over the weekend, Premier Wen and Foreign Minister Yang, there's a lot of interest around the world in the fact that the United States wants to re-engage on the CTBT issue.

The fifth issue is progress on the Fissile Material Cut Off Treaty which as many of you will know it's currently, discussion of that is blocked by Pakistan and Iran. I think the fact that it's blocked shouldn't lead us to drop it off our agenda because if we can't make progress in that area we're going to not be able to meet our challenge of creating the right conditions for longer term (indistinct).

And then there is a sixth set of issues which are about the practicalities of moving to zero, of disarmament, of verification. (Indistinct) we really do need a lot of expertise. It's fine for politicians to set goals, but we need very detailed work (indistinct) in to practice and I think that the UK can claim to be at the leading edge of this debate in trying to promote a very serious debate around the world on some of those most difficult verification issues.

I was asked to speak for ten minutes and not to give a long lecture and I fear that my ten minutes, there isn't a big clock somewhere nor a red light flashing, but I have a sense that my ten minutes may be just about up. But I want to just end by on, on the relationship between disarmament and non proliferation because there are important links. One is the obvious debating point that (indistinct) how can you urge other countries not to proliferate when there are nuclear weapon states. The answer to which is that's the heart of the Non Proliferation Treaty, which in many ways I see as a (indistinct) security treaty. And there are responsibilities on nuclear weapons states to fulfil their obligations under the Treaty, but there are also obligations on non nuclear weapons states.

But I think one can also turn the debate around, which is to say that when countries like Britain do achieve a seventy five per cent reduction in our warheads which has happened in this country over the last fifteen years, when countries like the United States do commit to substantial reductions in their own arsenals we are fulfilling an important part of our responsibilities, but we're also doing something else. We're also showing that we're serious and (indistinct) forty or so years after the signatures of the Non Proliferation Treaty it is time that we are serious. And one way we show this is by bold commitments, the other way we show that we're serious is by serious thought, serious debate and serious dialogue. And that is what this pamphlet is intended to, to promote, and it's what this meeting is intended to develop.

**** Source: http://www.fco.gov.uk/en/newsroom/latest-news/?view=Speech&id=13261048***

Transcript of the speech delivered by British Foreign Secretary, David Miliband at a launch event for a new Foreign Office paper at the International Institute for Strategic Studies (IISS) on Feb. 4 2009. This sets out the UK's position on creating the conditions for abolishing nuclear weapons.

III. The Logic of Zero

Toward a World without Nuclear Weapons*

Ivo Daalder and Jan Lodal

U.S. nuclear weapons were born nearly 65 years ago with the purpose of winning a worldwide war against Nazi Germany and imperial Japan. They grew up to deter a massive Soviet army that threatened to invade and dominate all of Europe. With the disappearance of that threat almost 20 years ago, nuclear weapons entered middle age in search of a new mission -- a search that continues to this day. Some suggest nuclear weapons are necessary to deter, or even preempt, the proliferation of nuclear weapons and other weapons of mass destruction. Others believe they are needed to destroy deeply buried, hardened targets in hostile states. But the reality is that only one real purpose remains for U.S. nuclear weapons: to prevent the use of nuclear weapons by others.

That reality has yet to sink in. U.S. nuclear policies remain stuck in the Cold War, even as the threats the United States faces have changed dramatically. Today, the gravest threat comes from the possibility of terrorists bent on delivering a devastating blow against the United States acquiring the capacity to do so with nuclear weapons. This threat is compounded by the dangers of nuclear proliferation, as more and more countries hedge against potentially negative developments in their regions by acquiring the wherewithal to build the bomb. Then there is the increasing global demand for nuclear energy, which will spread the infrastructure necessary to produce fissile nuclear materials still wider. The world, in short, is on the verge of entering an age of more nuclear weapons states, more nuclear materials, and more nuclear facilities that are poorly secured -- making the job of the terrorists seeking the bomb easier and the odds that a nuclear weapon will be used greater.

The grave nature of these growing threats has motivated a widespread rethinking of the U.S. approach to nuclear weapons. The most dramatic example is the vision of a world free of nuclear weapons articulated by former Secretary of State George Shultz, former Secretary of Defense William Perry, former Secretary of State Henry Kissinger, and former Chair of the Senate Armed Services Committee Sam Nunn in a January 2007 Wall Street Journal op-ed. Their vision has since been endorsed by no less than two-thirds of all living former secretaries of state, former secretaries of defense, and former national security advisers. Both Barack Obama (D-Ill.) and John McCain (R-Ariz.) have expressed support for it as well. Given this remarkable bipartisan consensus, the next president will have an opportunity to make the elimination of all nuclear weapons the organizing principle of U.S. nuclear policy.

Setting a vision of this kind is vitally important, but it is not enough. What is also needed is a strategic logic that explains how the world can get there from here. It involves four major steps, each difficult but feasible. First, Washington must establish as official policy the limited purpose of U.S. nuclear forces: to prevent the use of nuclear weapons by others. Other purposes are no longer realistic or necessary for the United States. Second, given this limited purpose of its nuclear weapons, the United States should reduce its nuclear arsenal to no more than 1,000 total weapons. This would be more than enough to convince anyone that the United States possesses the capacity to respond to any use of nuclear weapons with devastating effect. Third, the United States must work to put in place a comprehensive international nuclear-control regime that goes well beyond the present nonproliferation regime's accounting and monitoring of nuclear materials. It must include all fissile materials and provide an airtight verification system to enable the world to move from thousands of nuclear weapons to hundreds, to tens, and ultimately to zero.

Finally, Washington must launch a vigorous diplomatic effort to convince the world of the logic of zero -- and of the

benefits of taking the difficult steps necessary to get there. This effort should start with its closest and most important allies, then include other nonnuclear states who have long called for such an initiative, and ultimately encompass all nuclear states. U.S. leadership of this international effort will be crucial. And a willingness to act boldly to reduce its own reliance on nuclear weapons and drastically cut its own arsenal can give Washington the credibility necessary to succeed.

The Nuclear Legacy

The magnitude of this challenge is enormous - not least because the world today is awash in nuclear weapons and nuclear-bomb-making materials. There are still more than 25,000 nuclear weapons in the world, with Russia and the United States accounting for over 95 percent. There are also nearly 3,000 tons of fissile material - enough to produce over 250,000 nuclear bombs -- stored in more than 40 countries. This nuclear legacy is the result not only of the Cold War but also of the failed nuclear policies that successive U.S. administrations have pursued since the Cold War ended. The United States' force posture and deployments have changed greatly in the past 20 years, but its nuclear policies and thinking have remained essentially unchanged.

As the Soviet Union came apart at the start of the 1990s, there was some hope that new thinking about nuclear policy might emerge in its wake. President George H. W. Bush understood that the disappearance of a mortal enemy meant that nuclear weapons could play a much smaller role, and he ordered the unilateral elimination of 5,000 short-range nuclear weapons deployed in Europe and Asia and aboard the U.S. Navy's surface fleet. He also drastically cut back the number and readiness of U.S.-based strategic weapons, including taking all bombers off alert. Soviet and then Russian leaders committed to matching these reductions, and Moscow and Washington agreed to negotiate further drastic cuts in strategic weapons.

When Bill Clinton came into office, the stage had been set for a fundamental rethinking of U.S. nuclear policy. The means to that end was supposed to be the top-to-bottom Nuclear Posture Review. Unfortunately, the review proved a disappointment. Although further reductions in U.S. strategic forces were possible, the Pentagon concluded that the United States needed to maintain a huge number of nondeployed weapons as a hedge against the possibility of political and strategic reversals in Russia. Moreover, rather than further limiting the declared purpose of nuclear weapons, the Clinton administration expanded it by stating explicitly, for the first time, that U.S. nuclear weapons would be used to deter or respond to chemical or biological attacks on the United States or its allies.

On the campaign trail in 2000, George W. Bush promised to "leave the Cold War behind [and] rethink the requirements for nuclear deterrence." But once in office, he did so in a way that sought to expand, rather than contract, the role of nuclear weapons in U.S. national security strategy. His administration abandoned the decades-long effort to maintain a "firewall" between nuclear and conventional weapons. It reconceptualised the nuclear triad that had long distinguished between the ground-, air-, and sea-based legs of the strategic force so that it now consisted of nuclear and conventional offensive strike systems, defensive systems, and a revitalized defense infrastructure. To support the offensive leg, the administration sought to develop new types of nuclear weapons to target deeply buried sites and reduce collateral damage. And although it committed to reducing U.S. strategic forces to 1,700-2,200 operationally deployed weapons, the Bush administration also argued that the United States needed to retain a reserve force of many thousands more nuclear weapons.

Now, nearly two decades after the end of the Cold War, the United States still has a nuclear force posture that, even with fewer nuclear weapons, retains all of the essential characteristics it had during the Cold War. Thousands of weapons remain deployed, many ready to be used at a moment's notice. Many more weapons are retained in reserve. Official doctrine still assigns nuclear weapons "a critical role" in the nation's defense, describing them as providing "credible military options to deter a wide

range of threats, including [weapons of mass destruction] and large-scale conventional military forces."

The problem with this policy is that it fails to deal with the real threats the United States now faces -- nuclear terrorism and the further spread of nuclear weapons and technology. If anything, it makes those threats more dangerous. A nuclear arsenal of many thousands of weapons will do nothing to deter terrorists from using a nuclear bomb should they acquire one; indeed, the more nuclear weapons there are in the world, the more likely it is that terrorists will get their hands on one. Nor does current U.S. nuclear policy do anything to discourage further proliferation. After all, how can Washington expect to persuade other countries to forgo the very capabilities that the U.S. government itself trumpets as "critical" to national security? The nuclear status quo is clearly untenable. The United States needs to change its nuclear thinking and policies and bring them into line with the changed threats it now confronts.

The United States Must Lead

The first step on the road to zero is simply recognizing that U.S. nuclear weapons policy must change. The next president should announce that from here on out, the sole purpose of U.S. nuclear weapons will be to prevent the use of nuclear weapons by others. Many Americans already assume that the United States retains nuclear forces only to prevent a nuclear war. But in reality, such a policy pronouncement would represent a radical departure. Throughout the nuclear age, the United States has deployed nuclear forces for many additional purposes as well: winning wars, destroying difficult targets, deterring superior conventional forces, preventing the proliferation of nuclear weapons. But with the end of the Cold War and the development of new conventional technologies, these purposes have become increasingly irrelevant. The United States no longer faces the existential threat to its security that the Soviet Union once posed. And its current conventional military power is more than sufficient to defeat any other conventional military force.

Preventing the use of nuclear weapons by other countries is far from a trivial purpose for U.S. nuclear weapons. There is no way to defend reliably against a nuclear attack from the missiles or aircraft of a hostile state; such an attack can only be deterred through the certainty of devastating retaliation. Accordingly, so long as others have nuclear weapons, the United States must maintain a viable nuclear deterrent.

But deterring a nuclear strike requires many fewer weapons than a nuclear "war-fighting" force, provided the delivery systems can survive a surprise attack. Indeed, if the United States were to adopt a policy that explicitly limited the purpose of nuclear weapons to preventing their use by others, then it could drastically reduce its nuclear inventory to a total of 1,000 weapons - down from the 7,000 or so weapons it has today. This total should include all nuclear weapons - no matter whether they are deployed or held in reserve, carried by long-range missiles or short-range fighters, have high yield or low yield. Regardless of these distinctions, if one of them were ever to go off, the consequences for the course of world history would be profound, even incalculable.

Why 1,000 total weapons and not some other number? One thousand weapons would be sufficient to leave no one in doubt that the United States retains the ability of devastating retaliation in the case of a nuclear attack. The most significant such possibility would be Russia's threatening to strike the United States, as it did during the Cold War. But even then it was widely agreed that 400-500 weapons on target would assuredly destroy the Soviet Union's vast economic and military potential. Today, 1,000 weapons -- of which close to two-thirds could be deployed, on station, and survivable against any attack -- would provide such a retaliatory capability in extremis.

The United States also needs to rethink the planning process for using nuclear weapons and to restructure its nuclear operations. There has long been great concern about U.S. and Russian nuclear forces being on hair-trigger alert, ready to fire at a moment's notice. It is indeed critical that the risk of accidental use or miscalculation be eliminated, but the alert rate is less

the problem than are plans to launch a nuclear strike quickly during a crisis, including on receiving warning of an attack, in order to ensure the survivability of the forces or deny an opponent the ability to launch additional strikes.

To eliminate the need to ever make a decision to launch nuclear weapons before the situation is completely clear, the bulk of U.S. nuclear forces should be deployed at sea, where they are invulnerable while on patrol and could ride out any attack. The United States should also retain a few weapons for delivery by aircraft, both because such weapons can be more flexibly and quickly targeted than missiles and because they can be deployed in ways that demonstrate the continued U.S. commitment to the security of others. But the United States no longer needs land-based missiles, which, because of their inherent vulnerability, confront the president with a use-them-or-lose-them dilemma he can do without. Instead of preparing to launch weapons on warning, when under attack, or in prompt retaliation, the United States needs forces and planning that would enable any president to decide on retaliating at a time of his or her choosing. Rather than having just minutes or hours, the president should have days or weeks to make that decision.

Washington should make these changes in its nuclear force posture regardless of whether Russia agrees to adopt the same path. Despite some of its more recent actions, such as its ruthless invasion of Georgia, Russia is not a military threat to the United States. Its conventional forces are years behind U.S. technology. And in the worst case of a severe escalation of tensions, 1,000 weapons would provide a powerful deterrent and adequate time to make any necessary enhancements to U.S. military capabilities. Nuclear parity may have made sense during the Cold War, when Washington faced the daunting challenge of deterring an armored attack on Europe by a superior Soviet conventional force. It makes no strategic sense today.

Regime Change

Such a dramatic change in U.S. nuclear weapons policy would help restore the credibility of Washington's efforts to combat the proliferation of nuclear weapons and materials. This newfound credibility should make it possible to achieve much-needed progress on the nonproliferation agenda: negotiating a verifiable end to the production of fissile material for weapons purposes, securing the early ratification and entry into force of the Comprehensive Nuclear Test Ban Treaty, and strengthening the inspections provisions of international safeguards agreements undertaken by the International Atomic Energy Agency (IAEA). Still, these steps, even taken together, would not be sufficient to start on a path to zero. That would require putting in place a comprehensive nuclear-control regime that could effectively account for and monitor all fissile and weapons-grade materials (whether used for military or civilian purposes) during the many years it would take to get to zero -- and then after all nuclear weapons had been eliminated.

The Nuclear Non-proliferation Treaty (NPT) was intended to serve this role, but it has proved inadequate in a number of respects. India, Israel, and Pakistan never accepted the treaty, and they were therefore able to sidestep the world's nuclear-control system with relative ease. North Korea and Iran signed the treaty but then used their safeguarded nuclear power and research programs to develop the wherewithal to make the bomb. Pyongyang withdrew from the treaty in 2003 and then made the remaining short leap to testing a nuclear device. Tehran has been caught working on a weapons program and is enriching uranium, defying the demands of the IAEA and the UN Security Council to suspend these activities. There is no doubt that Iran has the capability to develop a nuclear weapon within the next few years.

The fundamental weakness of the NPT is that it permits a country to produce enriched uranium and plutonium, the only two materials from which a nuclear weapon can be fashioned, as long as it does so as a declared part of its civilian nuclear program. For many years, this was thought to be acceptable because the technical challenges involved in moving from possessing the capacity to operate a power plant to being able to build a nuclear weapon

were substantial (and kept largely secret by the established nuclear powers). But all this has changed. Centrifuge enrichment of uranium and the separation of plutonium from the spent fuel produced by a nuclear power plant are technologies that are now widely understood and publicized. Once a few kilograms of the necessary material, whether enriched uranium or plutonium, are available, fashioning it into a device that could explode with catastrophic consequences is not beyond the capacity of any determined group of individuals with access to substantial resources.

Accounting for and controlling the fissile materials that are produced or otherwise available is therefore the only secure method of ensuring that new bombs will not be developed -- and this is about to become even more difficult. Increased pollution, rising gas prices, depleted sources of oil supply, and global warming are fueling a growing demand for nuclear energy, including in many countries where antinuclear sentiment has long been very strong. The International Energy Agency has called for 1,400 new nuclear power reactors by 2050. As new reactors are built, more nations will insist on developing their own nuclear fuel cycle to enrich uranium for the sake of self-sufficiency. Facilities built to enrich uranium to the level needed to power a civilian reactor are essentially the same as those needed to produce weapons-grade uranium. Plutonium, the other bomb-making material, is a natural byproduct of producing nuclear energy, and it can be separated from power-plant waste ("spent fuel") through reprocessing -- a practice that is permitted under the NPT so long as it is done under IAEA safeguards. Once the facilities necessary to produce highly enriched uranium or separate plutonium are in place, only months are necessary to turn a permitted peaceful nuclear capability into a nuclear weapons capability.

Currently, the international accounting and verification systems that are mandated by the NPT can detect even small diversions of nuclear bomb material from civilian facilities. This was demonstrated by the success of UN weapons inspectors in Iraq after the 1991 Gulf War. Within a year, they had uncovered a highly sophisticated and diverse nuclear weapons program. More recently, microscopic traces of highly enriched uranium were detected on documents provided by North Korea - presumably as a result of the documents merely being in the proximity of the material.

But whatever its technical capabilities, the IAEA is understaffed and woefully underfunded, has limited authority to inspect suspect sites, lacks jurisdiction over much of the world's fissile material, and has no mandate to control the "breakout" capability derived from peaceful uses. The five declared nuclear states (China, France, Russia, the United Kingdom, and the United States), which possess the vast bulk of the world's fissile material, are not subject to international inspections (although the last two have voluntarily placed a few of their civilian sites under IAEA safeguards). Nor are the nuclear programs of the four nuclear states that do not accept the NPT regime (India, Israel, North Korea, and Pakistan) adequately safeguarded. Iran's nuclear program is technically under safeguards, but Tehran is not fully cooperating with the IAEA. There is also a very large amount of fissile material remaining in nuclear weapons themselves, as well as smaller amounts of material used in medical and research facilities, which is not covered by IAEA safeguards.

In order for the world to get anywhere near the point at which those states that have nuclear weapons would be willing to give them up, it will be essential to have in place a system of airtight accounting and monitoring of all fissile material around the globe -- no matter where it is located or what its purpose. A universal regime to account for and control fissile material of any kind would also have the added benefit of reducing the possibility that terrorists, who cannot build enrichment or reprocessing facilities of their own, could get their hands on the material necessary for manufacturing a nuclear device.

Once such a regime were in place and operating, the final steps in the process of abolishing all nuclear weapons would become, for the first time, not only feasible but also relatively straightforward. Since the regime would account for all fissile material either already fash-

ioned into weapons or capable of being used to make a weapon, there would be complete transparency concerning all nuclear weapons inventories -- actual and potential. If a state failed to eliminate a weapon and refashion the fissile material into a safe form, inspectors would know it. Catching cheating in the final reductions would be the same process as verifying compliance with the regime once all nuclear weapons had been eliminated.

To be sure, this regime would be unlike anything the world has ever attempted (although the verification procedures of the global ban on chemical weapons come close). The cost of operating an international organization tasked with enforcing such a regime (presumably built on the IAEA) would be many times what is being spent on inspections and safeguards today. The regime would have to cover not only those countries with declared nuclear facilities but all countries - whether they have nuclear weapons, facilities that produce fissile material, nuclear power plants, or none of these. And it would have to apply to both publicly and privately owned facilities. Its inspection mechanisms would seriously infringe on existing expectations of confidentiality and freedom of action, both for businesses and for governments (although fundamental rights must and could remain protected). Strong complaints would come from industry regarding the costs of compliance and the risk to intellectual property, and the nuclear weapons states would initially insist on protecting their nuclear weapons secrets.

But these objections are small compared to the benefits of having a comprehensive regime. Even the direct economic costs are likely to be low in comparison to the economic savings resulting from the elimination of nuclear weapons -- to say nothing of the overwhelming imperative of eliminating the risk of a nuclear weapon being used.

Putting this control regime in place should start with the United States' accepting its provisions. There would be no harm to U.S. national security from providing the full transparency required given the limited purpose and reduced numbers of U.S. nuclear weapons. The United Kingdom, which has in recent years called for active steps to promote nuclear disarmament, would also likely be a willing partner in starting the process. The technical capabilities and operational procedures could be developed, tested, and improved in just a few countries initially -- with others following suit as confidence in the regime was built.

Achieving Universal Acceptance

Ultimately, the effectiveness of a comprehensive nuclear-control regime will depend on universal adherence. It can only work if it works equally for all. (The lack of universality has been a major problem of the nonproliferation regime.) The fourth major step, therefore, is to use the shift in U.S. nuclear policy and the imperative of keeping nuclear weapons out of the hands of terrorists as the basis for a vigorous diplomatic effort to rally the entire world behind both the vision and the logic of zero.

The elimination of nuclear weapons is called for in Article 6 of the NPT, so it is not a new goal. Traditionally, two approaches have been stressed. One is to negotiate a treaty that would commit the nations of the world to nuclear disarmament by a certain date. This approach was championed by Indian Prime Minister Rajiv Gandhi 20 years ago, and it has long had many adherents in the UN Conference on Disarmament. Although such an effort can be useful in a normative sense, in practice it puts the cart before the horse. The problem is convincing countries to act in a way that makes a nuclear-weapons-free world possible.

The second approach focuses on Russia, which alone possesses more than half of the world's nuclear weapons stockpile. If Washington and Moscow could agree to reduce their inventories and ultimately eliminate them, the argument goes, then the other nuclear powers would eventually follow suit. But Russia will likely be among the most difficult countries to convince of the logic of zero; these days, Moscow is in many ways moving in the opposite direction. A Russia-first diplomatic strategy would therefore almost certainly doom the effort from the start. An intensive dialogue between the United States and Russia would of course be use-

ful, but it must not be the first condition for success.

Instead, Washington's international diplomacy should aim to create an ever-growing coalition of countries that accept the logic of zero. Success on this will require that more and more countries subscribe to three principles: that a world without nuclear weapons is the only way of guaranteeing that such weapons will never be used, that in the interim the only valid purpose of nuclear weapons is to prevent their use by others, and that all fissile material must be subject to international comprehensive accounting and control. Once a nation has accepted these principles, it has accepted the logic of zero, which implies a willingness to give up its weapons when all others do so as well. A somewhat different diplomatic approach will be needed for each of three groups of countries: the United States' allies, many of which rely on Washington's commitment to their security and defense; those nonnuclear countries that have long sought a nuclear-weapons-free world; and the nuclear weapons states, both declared and undeclared.

The first diplomatic step must be to convince the United States' allies that no change in nuclear weapons policy (before zero is reached) will alter Washington's fundamental commitment to respond to a nuclear attack against an allied nation with a devastating nuclear response of its own. Similarly, it should be made clear that a non-nuclear attack -including with chemical or biological weapons -- against any U.S. ally would trigger a response the consequences of which would far outweigh any benefits an attacker may have hoped to achieve. Once the clarity and certainty of the continued U.S. commitment to their security are clear, the United States' non-nuclear allies are likely to embrace the logic of the course Washington has laid out. Virtually all of them have the capacity to build nuclear weapons but have decided that they would be more secure in a world with fewer, rather than more, nuclear powers. They have also strongly supported the NPT, including its Article 6 commitment to eliminate nuclear weapons. It should not be a big leap for them to accept the three principles behind the logic of zero and join the effort to move toward a world without any nuclear weapons.

Once U.S. allies are on board, Washington's diplomatic attention should shift to the non-nuclear states that have long clamored for greater progress in arms control and disarmament. Countries such as Brazil, Indonesia, Ireland, Mexico, South Africa, and Sweden are important players in the international disarmament field - and have long accepted the logic of zero - and they should be natural allies in this effort. Some of them seriously considered acquiring nuclear weapons (and in the case of South Africa actually did) only to conclude that even in the absence of having a formal alliance with a nuclear weapons state, their security would be enhanced if they did not have them. Similarly, the proposed comprehensive nuclear-control regime ought to be attractive to nations that have long complained about the discriminatory nature of the current nonproliferation regime.

With U.S. allies and other non-nuclear countries on board, Washington will have created a broad-based, diverse, and global coalition consisting of the vast majority of the nations in the world. The final diplomatic target will be the nuclear weapons states not already behind the consensus. There is a good chance that two or even three of them will have joined the effort from the beginning. The United Kingdom has, in many ways, already bought into the logic. China and India have both adopted the formal position that they will not be the first country to use nuclear weapons - essentially an affirmation that they would consider their nuclear capabilities superfluous if others had no nuclear weapons to use against them.

More challenging will be to convince the other four long-standing nuclear powers - France, Pakistan, Israel, and, of course, Russia. France, which insists on retaining a nuclear force to protect its vital interests against any threat, has firmly embraced the logic of nuclear deterrence rather than the logic of zero. But as other nuclear powers move in a different direction, Paris' ability to remain a holdout will diminish -- as became clear in the 1990s when France finally decided to sign the NPT and, once again, after two last series of nuclear tests, when it signed on to the Comprehensive Nuclear Test

Ban Treaty. A democracy like France can remain an international outlier only for so long.

Pakistan developed its nuclear weapons primarily to deter India's nuclear arsenal. (India first demonstrated its nuclear capability with a "peaceful nuclear explosion" in 1974.) Islamabad also relies on its nuclear capability to offset its larger neighbor's conventional forces. But if India were to agree to give up its nuclear weapons - not unrealistic if China were to agree to do so as well - Pakistan's need to retain the bomb would greatly diminish. Of course, given India's conventional advantage, Pakistan would be more likely to follow India's example if relations with its larger neighbor were to improve, their differences were settled peacefully, and confidence and trust were being built. But a fundamentally changed nuclear environment could help bring such progress about.

Israel initially developed nuclear weapons out of the fear that its army could be overrun by the vastly larger Arab armies in the region. Today, Israel also faces the prospect of a nuclear-armed regime, Iran, that has openly called for its destruction - a critical reason to maintain a nuclear deterrent. But if strong pressure on Iran could succeed in reversing its nuclear program, Israel would have much less need for its nuclear weapons. Israel's peace treaties with Jordan and Egypt, for all of their disappointments, have largely eliminated any conventional military threat to Israel's existence, and Israel's own conventional forces, with significant and continuing help from the United States, are now dominant in the region. Israel has also consistently stated - as recently as this year -- that it favors an agreement that would make the Middle East a zone free of all weapons of mass destruction. As with Pakistan, if Israel can be assured that it will not face any nuclear threat from another state, it should prove possible to convince it to see the merits of joining a global effort to eliminate nuclear weapons and thus deny terrorists any opportunity to get the bomb.

The final challenge is likely to be Russia, which possesses well over half the world's nuclear weapons and fissile material. Unfortunately, in recent years Russia has begun to reemphasize the importance of its nuclear weapons, as a means both to exert its great-power status and to compensate for its greatly weakened conventional capabilities. Moscow is devoting more resources to modernizing its nuclear forces and increasing their operations, and it has openly declared that it might have to use its weapons in a variety of different circumstances. But getting Russia to reverse course is doable. With the vast majority of the countries in the world committed to a new path, and with the United States and other key nuclear powers very much part of that global commitment, remaining a holdout on this critical issue, especially if it can be linked to other matters of interest to Russia, will become more and more difficult. In the meantime, Washington and Moscow should intensify their dialogue on nuclear issues, avoiding linking the discussions to other disputes -- much as was done with the Soviet Union during the Cold War. They should focus on reaching agreements to steadily reduce their nuclear inventories and to enhance verification and nuclear transparency, which would help slowly win Moscow's acceptance of the logic of zero. Over time, Moscow would come to see the benefits of going all the way, just as the United States and most other countries will have done.

As the United States works diplomatically to create a broad international coalition, it can use the emerging consensus to help convince nuclear aspirants and new nuclear powers that their drive for a nuclear option must come to an end. Active diplomacy with Iran and North Korea must of course continue, backed when necessary by additional pressure to convince both countries that the benefits of forgoing or ending the nuclear option outweigh those of building or retaining the bomb. The likelihood of success would be significantly enhanced if the United States and other nuclear powers were demonstrably committed to adhering to the same non-nuclear status and fissile-material oversight that they are demanding Iran, North Korea, and every other nuclear aspirant accept.

The Imperative Of Zero

No nuclear weapon has been used since the dawn of

the nuclear age more than 60 years ago. That is a remarkable fact and one that few who witnessed the first nuclear explosions, in Alamogordo, New Mexico, and then over Hiroshima and Nagasaki, would have thought likely. Responsible nuclear stewardship, a relatively effective nonproliferation regime, and a good deal of luck have helped account for this achievement. But the world cannot continue to count on luck. Nor, as the nonproliferation system continues to fray and more countries acquire the capacity to build the bomb, can it count on states acting responsibly when it comes to these massively destructive capabilities. And in the age of nihilistic terrorism, the chance that a group of individuals united by their hatred for others and determined to inflict as much damage as possible will someday get their hands on the means to turn their dreams into a global nightmare is simply too great. That is why the fight against nuclear terrorism and proliferation must now be Washington's highest priority. The logic of zero is driven by this threat.

It will take a real commitment, at the highest levels and beginning with the United States, to turn the logic of zero into a practical reality. Many obstacles remain along this path, but it is important that Washington take the lead in setting out on that journey. The steps outlined here - limiting the purpose of nuclear weapons to preventing their use by others, reducing the U.S. nuclear stockpile to 1,000 total weapons, negotiating a comprehensive nuclear-control regime to account for and monitor all fissile material around the world, and pursuing a diplomatic strategy that seeks to build the largest possible coalition in favor of zero will take time to implement. Each is useful in its own right, and they should be implemented as soon as is practical. Together, they will provide a good basis for success down the road. Many obstacles remain along this path. But not to start down it now, step by step, would mean accepting the increasingly grave risk that another nuclear weapon will one day be used.

Ivo Daalder is a Senior Fellow at the Brookings Institution. He is reportedly tipped to become the next US Ambassador to the NATO. Jan Lodal is immediate past President of the Atlantic Council of the United States and a former senior Defense Department and White House official in the administrations of Richard Nixon, Gerald Ford, and Bill Clinton.

**** Source: http://www.foreignaffairs.org/20081001faessay87606/ivo-daalder-jan-lodal/nuclear-policy-and-the-next-administration.html***

*IV. Non-Proliferation, Arms Control and Future of Nuclear Weapons: Is Zero Possible?**

Mayankote Kelath Narayanan

IT gives me immense pleasure to present before such a distinguished audience India's views on the question - Non-proliferation, Arms control and the future of nuclear weapons; is zero possible?

To share a panel with distinguished personalities such as Dr. Henry Kissinger and Foreign Minister Steinmeier of Germany is indeed a privilege. Dr. Kissinger was the author of forward looking studies in the late 1980s wherein the doctrine of 'Discriminate Deterrence' was propounded. This doctrine in one way or the other has influenced during the decades of the 1980s & 1990s the development of military systems - both conventional and nuclear. It has thus had a significant impact on arms control, disarmament, and non-proliferation per se.

Foreign Minister Steinmeier was our honoured guest in India

last year, as was Ambassador Ischinger, and is widely respected in our country. What Foreign Minister Steinmeier has said today was heard with great interest since Germany, though not a nuclear weapon State, had nuclear weapons stationed on its soil for decades. No issue relating to European or global security, or for that matter nuclear disarmament, can be meaningfully addressed without Germany's contribution.

It is, therefore, befitting that Munich, and the Munich Security Conference, should form the setting for a discussion on an issue of a seminal interest. In the past, the Munich Security Conference had played a key role in bringing together two antagonistic entities. If this Conference succeeds in not merely addressing the issue of nuclear reductions, but also devise pathways to their elimination, this might well be the transforming moment for the global community.

For many of us here questions relating to nuclear weapons viz. their control, reduction or elimination, is not a mere matter of academic debate. It involves serious, and vital, questions of national security.

At the outset, however, I would like to spell out how we define the three terms - arms control, disarmament and non-proliferation -which could be at some variance with the views of some other countries. We view disarmament as referring to concrete reductions in nuclear arsenals with the ultimate objective of achieving a nuclear-free world. We do not envisage it as replacing existing arsenals by new categories of nuclear weapon systems. Our perception of arms control is that by addressing the issue piecemeal it merely tends to perpetuate nuclear weapons in the hands of a few chosen nations. Non-proliferation is seen as essentially an extension of the arms control regime.

India's approach to nuclear disarmament, nuclear non-proliferation, and by extension to arms control, is essentially based on the belief that there exists close synergy between all three. Non-proliferation cannot be an end in itself, and has to be linked to effective nuclear disarmament. Nuclear disarmament and non-proliferation should be seen as mutually re-inforcing processes. Effective disarmament must enhance the security of all States and not merely that of a few.

India had set out goals regarding nuclear disarmament as far back as 1988. In June of that year, the then Prime Minister of India, Rajiv Gandhi, had presented to the United Nations an 'Action Plan for ushering in a nuclear weapons-free world and non-violent order', which outlined India's imperatives. It is significant that the Action Plan began with the following words which appear even more relevant to-day:

"Humanity stands at a crossroads of history. Nuclear weapons threaten to annihilate human civilization and all that mankind has built through millennia of labour and toil. Nuclear weapon states and non-nuclear weapon states alike are threatened by such a holocaust. It is imperative that nuclear weapons be eliminated".

The Action Plan was by far the most comprehensive initiative at the time, on nuclear disarmament, covering issues ranging from nuclear testing and cessation of production of fissile material for nuclear weapons to a time-bound elimination of stockpiles. At the heart of the Action Plan was a commitment to eliminate all nuclear weapons in stages by 2010.

India has been, and still remains, a strong and unwavering advocate of global nuclear disarmament, reflecting the passionate advocacy of nuclear disarmament of its first Prime Minister, Pt. Jawaharlal Nehru. Even to-day, India is perhaps the only nuclear weapons State to express its readiness to negotiate a Nuclear Weapons Convention leading to global, non-discriminatory and verifiable elimination of nuclear weapons.

In October 2006, India put forward a set of proposals at the United Nations General Assembly in a Working Paper which outlined certain steps that could lead to the elimination of nuclear weapons. I might here mention a few of these suggestions here:

- Reaffirm the unequivocal commitment by all nuclear weapon States to the complete elimination of nuclear weapons;
- reduce the salience of nuclear weapons in security doctrines;
- reduce nuclear danger, including the risk of accidental nuclear war, by de-alerting nuclear-weapons to

prevent unintentional or accidental use of nuclear weapons;

- negotiate a global agreement among nuclear weapons States on 'no-first-use' of nuclear weapons;
- negotiate a universal and legally-binding agreement on non-use of nuclear weapons against non-nuclear weapon States;
- negotiate a Convention on the complete prohibition of the use or threat of use of nuclear weapons; and
- negotiate a Nuclear Weapons Convention prohibiting the development, production, stockpiling and use of nuclear weapons and on their time-bound destruction, leading to the global, non-discriminatory and verifiable elimination of nuclear weapons.

While awaiting concrete and practical measures for the elimination of nuclear weapons and the means of delivery, and the creation of a legal regime or universal applicability, India welcomes the renewed interest in and support that nuclear disarmament has received from statesmen as well as experts in the field. India is prepared to engage with the various proponents of nuclear disarmament and to meaningfully contribute to these initiatives. India has taken note of the initiatives in this regard launched by four eminent statesmen - Dr. Kissinger, George Shultz, William Perry and Sam Nunn, whose ideas are now included in the 'Hoover Plan'. India's position was very recently enumerated by India's Prime Minister Dr. Manmohan Singh. First, on June 9, 2008, to mark the 20th anniversary of the presentation of the Action Plan by Shri Rajiv Gandhi at the United Nations, and next, when the Prime Minister addressed the UN General Assembly in September 2008. The running theme of both the speeches was a reiteration of India's support for a Nuclear Weapons Convention and endorsement of a nuclear weapons-free world as enshrined in the Rajiv Gandhi Action Plan of 1988.

The debate on disarmament, specially nuclear disarmament, gives rise to the hope of greater understanding that could lend itself to a firm commitment for action on nuclear disarmament. As concrete steps towards this end, I shall mention the following:

1. Reaffirmation of the unequivocal commitment by all States possessing nuclear weapons to the goal of complete elimination of nuclear weapons. Commitments must be clear and unambiguous and convey some urgency for achieving this goal. This would apply to NPT States as well as non-NPT States.
2. Reduction of the salience of nuclear weapons in security doctrines. It is unfortunate that despite the end of Cold War, there has not been any appreciable change in the centrality of nuclear weapons in the security doctrines of the major nuclear weapon powers.
3. Adoption of measures by States to reduce nuclear dangers, including preventing the unintentional or accidental use of nuclear weapons. Since 1998, India has been sponsoring in the General Assembly a Resolution entitled "Reducing Nuclear Danger". We welcome the fact that more countries are now paying attention to global de-alerting of nuclear weapons.
4. Negotiations on global agreement among the nuclear powers of a 'no first use' of nuclear weapons.
5. Negotiations towards a universal and legally binding agreement on non-use of nuclear weapons against non-nuclear weapon States.
6. Negotiation of a Nuclear Weapons Convention on the prohibition of the use, and threat of use, of nuclear weapons. Since 1982, India has proposed that such a Convention be negotiated in the Conference on Disarmament.
7. Negotiations on a Nuclear Weapons Convention that would prohibit the development, production, stockpiling and use of nuclear weapons and on their destruction leading to a global non-discriminatory and verifiable elimination of nuclear weapons within a specified time-frame.

I would like to conclude by once again recalling Prime Minister Rajiv Gandhi's stark warning when he presented his Action Plan to the UN General

Assembly in 1988. He said that the 'alternative to co-existence is co-destruction'. We hope that the message of this Conference will be firmly in favour of humanity's co-existence in a nuclear weapon free world.

The speaker is the National Security Advisor, India.

**** Source: <http://www.securityconference.de/konferenzen/rede.php?menu_2009=&menu_konferenzen=&sprache=en&id=227&>. (Text of speech delivered at the Munich Security Conference on Feb. 6 2009)***

V. Revitalising High-level Non-Proliferation and Disarmament Talks

Gareth Evans

- In 2008, Australia and Japan established the International Commission on Nuclear Non-Proliferation and Disarmament to reenergize high-level political debate about the need to eliminate the world's nuclear threats.
- The commission's 15 commissioners include former heads of state and senior ministers and arms control experts from around the world.
- They intend to produce their first report by the end of the year to help shape a global consensus before the 2010 NPT Review Conference and beyond.

Unproductive blame shifting has dominated the nuclear debate in recent years, frustrating progress and serving only the interests of those who are content to see no movement on nonproliferation and disarmament. Rekindling a spirit of common purpose on the nuclear agenda is an urgent task.

Despite the post-Cold War decline in public attention, the consequences of nuclear weapons proliferation and an indifferent international performance on nuclear disarmament remain potentially catastrophic.

We all know the scale of the problem. There are still tens of thousands of nuclear warheads in the world. And thousands of these warheads remain on high alert, ready to be launched within minutes. All the while, the Nuclear Non-Proliferation Treaty (NPT) nuclear weapon states show no signs of giving up their nuclear arsenals, regardless of the NPT's ultimate goal of a nuclear-weapon-free world. India and Pakistan have emerged as nuclear-armed states, joining the presumed nuclear-armed state of Israel outside the disciplines of the NPT. North Korea and Iran continue to pose major, and as yet unresolved, proliferation challenges. And new issues have emerged--such as the risk of nuclear and radiological terrorism and ensuring that the climate change-driven revival of interest in nuclear energy for electricity generation does not increase proliferation risks.

The manifest challenges faced by the nuclear nonproliferation and disarmament regime justify a concerted and energetic international response. The policy responses needed have been spelled out often enough--most recently in the reports of Hans Blix's commission and Ernesto Zedillo's IAEA 2020 Commission--but there has been little genuine international dialogue. And there remains a conspicuous lack of consensus on what needs to be done to maintain and strengthen the nonproliferation and disarmament regime. This stalemate must be overcome. Otherwise, the world risks drifting to a more dangerous and unstable future of more nuclear-armed states and an even greater risk that nuclear weapons will be used deliberately or by accident.

It is for this reason that last year Australia and Japan established the International Commission on Nuclear Non-Proliferation and Disarmament. A global initiative, the commission is designed to reenergize at a high political level the debate about the need for a nuclear-weapon-free world--and all of the interrelated issues of nuclear disar-

mament, nonproliferation and the future of civil nuclear energy--in the run up to the May 2010 NPT Review Conference and beyond.

The 15 commissioners include former heads of state and senior ministers, military strategists, and disarmament experts from around the world, and are supported by a high-level Advisory Board, with research input coming from a number of Associated Research Centres, again from across the globe.

The commission first met in Sydney in mid-October 2008 and plans to meet around six times over the next two years, with the next two meetings scheduled for Washington in mid-February and in Moscow in mid-June. In addition, regional consultations are proposed for Northeast Asia, South Asia, the Middle East, and Latin America to exchange views with a cross-section of the interested official and civil society communities in those regions.

The commission is aiming to produce a substantial report by the end of 2009 to help shape a global consensus before the 2010 NPT Review Conference. It is likely to produce a supplementary report in mid-2010 that will review the post-NPT Review Conference landscape. A specific concern from the outset will be to identify how the non-NPT nuclear-capable states (India, Pakistan, and Israel) might be brought into a genuinely international nonproliferation and disarmament system.

Overall, we hope the commission will be able to bring together in a comprehensive, systematic, and accessible way all of the issues being addressed by many current research and advocacy projects around the world and to package our own analysis and recommendations in a way that resonates with political leaders and the public.

Engaging decision makers will require that the commission take a practical and realistic approach to the many factors continuing to drive nuclear weapons acquisition and retention. The commission will need to argue compellingly that the risks of retaining nuclear weapons far outweigh the perceived benefits.

The tone for such an argument has been set by the Wall Street Journal op-eds of former secretaries of state George Shultz and Henry Kissinger, former Defense Secretary William Perry, and former Georgia Democratic Sen. Sam Nunn who have put forward a hard-headed, realistic case for a world without nuclear weapons. Perry is one of our commissioners, and Kissinger, Nunn, and Shultz are on our Advisory Board.

The commission will be developing an advocacy strategy aimed primarily at engaging the attention of governmental decision makers and those who influence them. The benefits of establishing a new global consensus on nuclear issues will need to be clearly seen to justify the compromises that will be necessary to craft it. Bringing on board a wide range of countries, including at least some of the nuclear-armed states, will be essential.

While the commission is funded by the Australian and Japanese governments, the commissioners are independent and the commission's analysis and conclusions will not necessarily reflect the views of Australia, Japan, or any other government. Naturally, we hope that Australia and Japan, as the sponsoring governments, will vigorously advocate in support of the commission's findings, but this will be a decision for those governments at the appropriate time.

Australia and Japan's decision to establish the commission and the support they are providing mark this as a serious effort to get the nuclear agenda moving again. From both countries, there is political commitment at the highest level--the current Australian and Japanese prime ministers announced the establishment of the commission in July 2008 and jointly announced its composition two months later.

The strong credentials of both countries on nuclear issues reflect well on the commission. Australia and Japan are practical and constructive contributors on nuclear nonproliferation, disarmament, and civil use issues. Both understand that nuclear disarmament needs to proceed in ways that do not create international instability or diminish the security of any country. Both have strong interests in effective nonproliferation, safety, and security--

Australia as a major supplier of uranium for peaceful use and Japan through its leading role in the civilian nuclear industry.

The many positive reactions to the commission's establishment suggest there is strong support for reevaluating current nuclear assumptions and their utility for addressing the major challenges that have emerged in the last decade in the nuclear environment. There are also encouraging signs that the climate for progress on nonproliferation and disarmament may be improving, above all with the election of a new U.S. administration seriously committed to progress on both fronts. It will be the commission's task to contribute to building a climate of renewed international commitment to resolving nuclear issues and to identify realistic options for how to achieve such a goal.

The author is the president of the International Crisis Group, Evans serves as the co-chair of the International Commission on Nuclear Non-Proliferation and Disarmament, a global initiative established in 2008 by Australia and Japan to reenergize high-level political discussion about the elimination of nuclear weapons. Previously, he has chaired many other global commissions, including the U.N. Secretary-General's High-Level Panel on Threats, Challenges, and Change in 2004.

Source: http://www.thebulletin.org/web-edition/features/revitalizing-high-level-nonproliferation-and-disarmament-talks. Carried by the Bulletin of the Atomic Scientists on Feb. 4 2009.

E. Nuclear Power

I. CNDP CHARTER OF DEMANDS

TOWARDS ENSURING SAFETY, TRANSPARENCY AND ACCOUNTABILITY IN THE CIVILIAN NUCLEAR SECTOR

THE government of India is intent on expanding nuclear power generation and related activities on the premise that nuclear power holds the key to India's long-term energy security, and is appropriate to India's needs, besides being economical, clean, safe, environmentally sound and climate-friendly.

The agenda to promote nuclear power has acquired greater thrust and importance as a result of the lopsided debate on the United States-India nuclear cooperation deal, and is likely to retain its salience irrespective of the eventual fate of the deal, which has been cleared by the International Atomic Energy Agency, the Nuclear Suppliers' Group, the U.S. Congress and now signed into law by the US President. It is also being pushed aggressively by US corporate interests, and by French and Russian nuclear equipment manufacturers, as well as India's own Department of Atomic Energy (DAE).

However, the government has failed to make out a persuasive case for promoting nuclear power. The DAE's record of nuclear power generation inspires no confidence in respect of safety, economic viability, transparency or accountability. Imports of nuclear reactors and materials cannot be a substitute for resolving the numerous problems indicated by this record and rooted in the infrastructure of the Indian nuclear programme.

We in the CNDP remain highly sceptical of the extravagant claims made about the safety, environmental sustainability and cost-effectiveness of nuclear power, many of which stand belied in practice, especially in India. We believe that other sources of energy, especially environmentally sound renewable sources amenable to decentralised use, must be promoted on a priority basis while the claimed benefits of nuclear

power are subjected to critical scrutiny.

Nevertheless, insofar as the government continues with the civilian nuclear programme, and seeks to expand it, it must respect the imperatives of safety, health, transparency, accountability and environmental sustainability. This calls for an extensive and radical reform of a number of legal and practical arrangements concerning the planning, appraisal and approval of nuclear power projects, and their regulation in respect of safety, transparency and related matters.

India must not rush into nuclear power generation or undertake related activities unless these arrangements are first put in place. Indeed, it is imperative to review the existing arrangements too in respect of already operating facilities.

We therefore specifically demand the following:

1. The Atomic Energy Regulatory Board (AERB) which is supposed to monitor the performance of the Department of Atomic Energy (DAE) has for all these decades come under the ultimate control of the DAE itself! This arrangement cannot be allowed to continue. The current situation goes against the strictures of the Convention on Nuclear Safety to which India is a signatory and which calls for an "effective separation between the functions of the regulatory body and those of any other body or organization concerned with the promotion or utilization of nuclear energy".. The AERB must be immediately made completely independent of the DAE and staffed by senior personnel known for their public probity and independence of mind who can be trusted to be completely impartial in their supervision. Further, its budget provisions should come through the Ministry of Environment and Forests.
2. Before any construction of nuclear reactors and related activities begins and before any new mining of uranium activity (e.g. in Andhra Pradesh, Meghalaya, Ladakh) or anywhere else is started, the Ministry of Health in conjunction with independent and authoritative NGOs working in the field of health must carry out baseline epidemiological surveys in that area. A process of regular health monitoring to detect and therefore address possible deleterious effects of such mining activities on the local population must be instituted. This increase in all kinds of nuclear related mining activities merits particular notice and attention. A comprehensive baseline survey should be mandatory before undertaking any new nuclear related activity such as prospecting, mining or taking decisions to set up nuclear plants in any part of the country. Such a provision can also be made applicable to plants like Koodankulam which are about to come on stream.
3. The Indian Government must put forward immediately, new legislation to to replace the 1962 Atomic Energy Act. The civilian sector should be completely separated from the military-related facilities and laws passed to ensure maximum transparency of functioning and maximum public accountability of the civilian sector.
4. RTI (Right to Information Act) must be made fully applicable to all aspects pertaining to the existence and development of the civilian nuclear energy sector so that the government cannot claim secrecy in the name of 'security' considerations and thereby hide relevant information.
5. It is imperative that the Civilian Nuclear sector and all deals, transactions and business arrangements, be governed by unambiguous and comprehensive legislation especially to cover all possible situations where health and public safety is likely to be hazarded by accidents and failure to ensure adequate safety standards. This takes on particular significance in light of the passing of the Indo US Nuclear Deal agreement and reports of a large number of contracts in the pipeline between public and private sector groups, where there are little or no liabilities on the above being covered by the parties

concerned, and where it is only the government which is accountable. We demand that a graduated set of punitive measures must be put in place to cover conceivable contingencies as also a comprehensive range of compensation measures for possible victims in respect of the scale and degree of damages/suffering incurred.

6. Insofar as the private sector is to be involved or allowed into the development of the civilian nuclear sector whether in providing materials, carrying out construction activities, etc., companies should be required to take up mandatory insurance to cover for damage to public health from catastrophic accidents. Nor should the Indian government provide any liability cap whereby the government covers damages over and above the insurance limit should circumstances require this. Companies found to be at fault in their activities that result partially or fully in accidents/leaks/failures, must then be held fully accountable and pay the full measure of damages they have caused. There should be no question of the Indian government enticing the private sector through a liability cap which effectively means that the Indian government is promoting the privatization of profits even as it is 'socialising' the risks and costs of private sector negligence, failure and shortcomings.
7. Emergency plans in case of disasters which include procedures for mass evacuation must be publicly discussed and examined and approved by the representative bodies of the likely to be affected population. Unless comprehensive and detailed legislation is enacted in each case and promulgated by the authorities prior to giving sanctions, no such activity should be permitted. This is elaborated below:
8. The existing process of granting environmental clearance to all nuclear projects must be radically reformed and tightened, with mandatory public hearings based on full disclosure of all pertinent facts and issues, including those related to the generic problems of nuclear electricity generation, including radiation, effluents and emissions, requirements and availability of resources such as freshwater, impact on forests, fauna and flora and local eco-systems, potential for accidents and mishaps, waste separation, storage and disposal, hazards from transportation of nuclear materials, and risks to the public, and planned measures to mitigate these. Veto power must be entrusted to an informed local population as to whether they wish or not wish to have uranium mining take place in their areas or whether or not they wish to allow a nuclear reactor or other related dangerous facilities to come up in their areas. Instead of the farce that on occasions currently takes place, there must be proper Jan Sunwais that are well-advertised, organized by independent civil society bodies and open not just to government spokespersons but to participation and testimonies from all, be these ordinary civilians, concerned groups or experts. The local population must be able to hear all sides, be provided relevant materials in the local languages of the region as well as in English from all quarters, and otherwise be given the capacity to be fully informed so that it can make up its mind on the pros and cons of whether or not to accept the establishment of the nuclear energy-related facilities the government proposes.

For a country that nurses ambitions of joining the Global Nuclear Club and has worked with nuclear technologies for over five decades, the utter absence of transparency and basic safety and security measures that prevails is totally unjustified, reprehensible and unacceptable. The entire area of Nuclear Power and Energy needs to be demystified on the one hand and the Nuclear Industry must take the lead together with Government, to inform and educate the public with regard to all matters pertaining to radiation, health,

safety and security of our people. This is the least that the GOI owes to the Indian Public. As the saying goes, politics is too important to be left to politicians, so it is with all things nuclear. It is too dangerous and too critical a matter to be left only in the hands of the scientists and politicians. A citizens' charter and movement for a Nuclear Free World is our demand today. As the saying goes, politics is too important to be left to politicians, so it is with all things nuclear. It is too dangerous and too critical a matter to be left only in the hands of the scientists and politicians. A Citizens Charter and Movement for a Nuclear Free World is our demand today.

On behalf of the Coalition for Nuclear Disarmament and Peace (CNDP)
Admiral (Rtd) L. Ramdas
Achin Vanaik , M.V. Ramana
Sukla Sen,
Dr S.P. Udayakumar
Anil Chaudhary, Praful Bidwai
N.D. Jayaprakash and others

*II. Energy: Clean and Green Gets a New Champion**

Nastassja Hoffet

UNITED NATIONS, Feb 11 (IPS) - The launch of a new international agency devoted solely to the promotion of renewable energy last month was applauded by many environmental groups, but left others wondering whether it is too little, too late.

On Jan. 26, 75 countries signed the statutes of the International Renewable Energy Agency (IRENA), the first intergovernmental agency exclusively focused on the promotion of green power sources like wind and solar.

"This is very historic," Michael Eckhart, executive director of the non-profit American Council on Renewable Energy and who attended the conference in Bonn, told IPS.

With a staff of 120 and a modest 25-million-dollar budget, IRENA will support and advise governments on how to build capacity, improve financing, effect technology transfers and boost know-how for renewable energies.

The German government said its aim is "to close an institutional gap". But some observers are seeking clarification about its mission and standing in the existing network of global environmental bodies.

This includes the International Energy Agency (IEA), the United Nations Environment Programme, the U.N. Framework Convention on Climate Change, as well as numerous non-governmental organisations such as the Renewable Energy Network for the 21st century (REN21).

"It is still unclear what role this agency can play," Sven Teske, Greenpeace International's renewable energy director, told IPS. "The IRENA is not yet a United Nations body so it is not binding."

He noted that IRENA's budget is one-tenth of Greenpeace's, and the environmental group still struggles to influence policy.

In addition, some of the world's biggest polluters and energy consumers - like China and the United States - are not among the signatories of IRENA.

However, advocates do see positive signs, especially in the U.S., where the day after Hillary Clinton as sworn in as secretary of state, a decision was taken to reverse the George W. Bush administration's boycott of the meeting and to send an observer to Bonn.

Now the priority is to get the United States back on board climate change negotiations and greenhouse gas emissions reduction targets - an objective to which IRENA is assumed to be a facilitator.

Despite assurances from Sigmar Gabriel, Germany's environment minister, that it will operate without interference, "this might be 10 years too late," Teske said. "Right now we are at a very crucial moment and do not have time to wait for setting up of the bureaucracy of an agency, which will not be able to work within the next one or two

years."

Most environmental groups' highest priority is to get governmental agreement to shift their energy policies away from the fossil fuels which are driving climate change.

The Kyoto Protocol follow-up process, as well as the United Nations Climate Change Conference to be held in Copenhagen in December 2009, will attempt to conclude a new framework for ambitious greenhouse gas emissions reduction.

U.N. Secretary-General Ban Ki-moon has dubbed 2009 "the year of climate change" as the planet faces interrelated challenges such as global warming, rocketing energy prices and dwindling natural resources.

Renewable energy can address many of these challenges by securing supplies, and fostering economic growth and employment in an affordable and sustainable way.

Still, IRENA's mission faces a long list of obstacles, including lack of awareness among policy-makers, technical barriers, high import tariffs, lengthy permit procedures and insecure financing.

In a business as-usual scenario in which demand for fossil fuels continues at its present rate, greenhouse gas emissions could rise up to 60 percent in the next two decades, driving temperatures five degrees C. higher or more.

The economic losses due to climate change could equal 20 percent of global Gross Domestic Product (GDP).

Researchers have shown that renewable energy is already competitive and will be even more so in coming years. A recent Greenpeace report titled "Energy [R]Evolution" offers a blueprint for how countries can halve global CO2 emissions by 2050, using existing technology and without sacrificing affordable prices and economic growth.

"Renewable energy can and will make it," said Teske.

Renewable energies also open new paths for development: they can be up and running more quickly than traditional power stations, for example. They enable countries to better provide access in rural areas, and they are more flexible to meet demand.

According to the IEA, while the world population is projected to reach nine billion by 2050, the world's energy needs will increase some 50 percent by 2030. Today, a third of the world - 2.4 billion people - lacks access to reliable power.

In 2006, renewable energy contributed some 18 percent to total energy consumption and created 2.4 million jobs. Last year, 250 billion dollars was invested in renewable energies.

**** Source: <http://www.ipsnews.net/news.asp?idnews=45736>.***

Membership Form

Annual Membership Fee:
Students Rs. 20, Individuals Rs. 100,
Organisations Rs. 500

Name:

Organisation:

Address:

Phone:
e-mail:

Please mail your Draft/Cheque, drawn in favour of "peace-cndp", payable at New Delhi, to
CNDP A-124/6, Katwaria Sarai, New Delhi 110 016

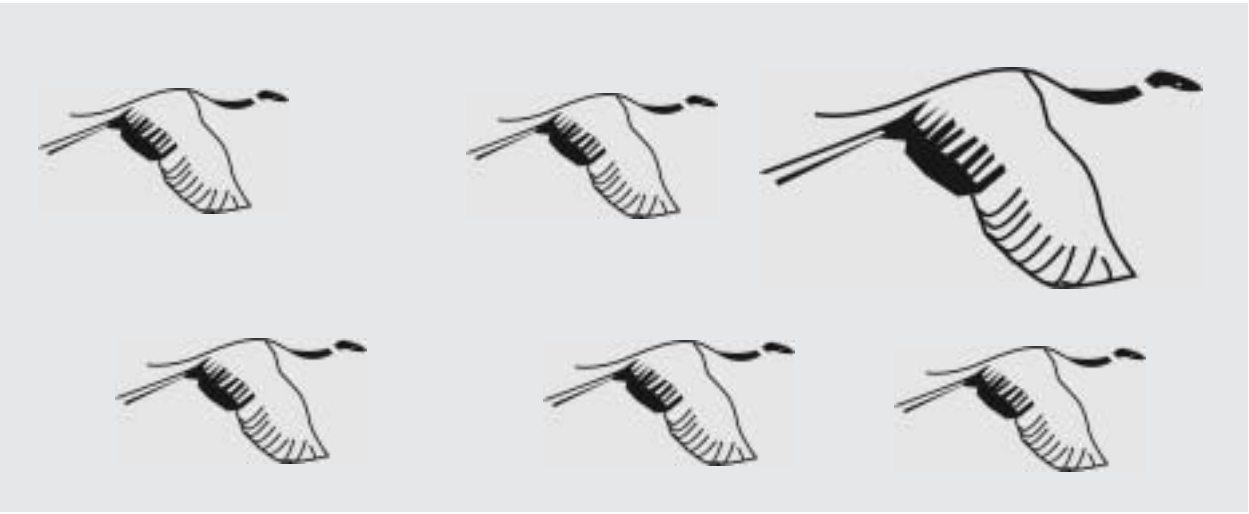
CNDP

The Coalition for Nuclear Disarmament and Peace (CNDP) is India's national network of over 200 organisations, including grassroots groups, mass movements and advocacy organisations, as well as individuals. Formed in November 2000, CNDP demands that India and Pakistan roll back their nuclear weapons programmes. Our emphasis:

- No to further nuclear testing
- No to induction and deployment of nuclear weapons
- Yes to global and regional nuclear disarmament

CNDP works to raise mass awareness through schools and colleges programmes, publications, audio and visual materials, and campaigning and lobbying at various levels.

CNDP membership is open is both individuals and organisations. So if you believe nuclear weapons are evil and peace is important, fill in the Membership Form!



For Private Circulation Only
Published from CNDP, A-124/6, Katwaria Sarai, New Delhi - 110 016, Telefax: 26517814
E-mail: cndpindia@gmail.com, Website: www.cndpindia.org
Editors: Ilina Sen, Anil Chaudhary, Sukla Sen