



EDITORIAL

The Indo-US nuclear deal has made a dramatic comeback, comeback from near certain death. Just when it was being considered to have entered its terminal phase, it made a dramatic turn around.

True, this is not the first time that it did so. Like the proverbial cat, it also seems to have more than one life. But this time the comeback was even more dramatic and far more tumultuous.

Last time, it was in November last. The Left was determined to deny the necessary go-ahead to the government of India, critically dependent on its support, to approach the International Atomic Energy Agency (IAEA) to negotiate the India-specific Safeguards Agreement, subsequent to the 123 Agreement clinched with the US, towards operationalising this deal. After a show of uncharacteristic belligerence, virtually challenging the Left to do whatever they can, Prime Minister Manmohan Singh just went out of gas, presumably under the pressure from the High Command goaded by the poll-phobic allies. Singh, in fact, made a public show of his surrender. His two pronouncements became all too famous. "The nuclear deal is not the end of life!" "This is not a single-issue government". A meeting of the UPA-Left committee to decide on the deal scheduled on November 16 was called off. That seemed to be end of the road. As far as the deal was concerned.

But it was not to be! Suddenly, to the consternation of many, including the junior constituents of the Left, the meeting was revived. The government

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was allowed to go ahead with the proviso that before approaching the IAEA Board of Governors to finally seal the requisite agreement worked out with the IAEA Secretariat, it would be placed before the committee and its findings would be appropriately factored in. While the negotiations were being concluded, the Left hardened its stand. And the deal looked as good as dead, only awaiting the formal cremation.

But things started changing in the month of June and thereabout. Manmohan Singh started showing some teeth. Tensions mounted.

To cut a long story short, in a dramatic move, onboard a flight to Japan to attend the G-8 Summit, on July 7 Singh announced that India would go to the IAEA BoG.

It was deliberately provocative, visibly out of tune with his statement on the previous day from the Indian soil and, even more so, the missive sent by the External Affairs Minister on the same day, just an hour or so before, to the Left inviting them for a meet on July 10 to discuss the issue.

Somewhat predictably, the Left was pushed to withdrawing its support. The government became a minority government. Yet the Draft Agreement was almost immediately sent to the BoG, again flouting a commitment made by the External Affairs Minister.

Since then, the government has survived a trust vote (taken on July 22), which saw large-scale cross-voting. The ugly underbelly of Indian democracy stood exposed as never before. If three BJP MPs triumphantly waving bundles of currency notes, allegedly received as bribe to abstain from voting, on the floor of the Lok Sabha was transmitted live by the TV cameras to the Indian houses; the Speaker of the Lok Sabha was soon after expelled by his parent party for breach of discipline. Neither has any precedence

even in the murky history of Indian democracy.

Be that as it may, on August 1, the Draft Agreement has been approved by the 35-member IAEA BoG. Rather tamely, without any voting.

The IAEA approval had never been in doubt, nor so, with strong backing from France and Russia. Even then its passage without any voting was perhaps a welcome surprise even for the GoI. Pakistan's show of bravado, with a sharp critique of the Draft Safeguards Agreement, just fizzled out under obvious US pressure. And Pakistani Prime Minister's routine clamour for a similar deal while visiting the US, just before the IAEA meet, was simply ignored.

But the easy ride that India enjoyed in the IAEA is perhaps more apparent than real. We have carried here the statement by the Austrian representative, which deserves a close reading. It, rather significantly, says that the "decision [not to obstruct the Draft India-specific Safeguards Agreement] does in no way prejudice the decision on a possible India-specific exemption in the Nuclear Suppliers Group which will be discussed in the appropriate fora."

From the 45-member NSG, India is asking for an "unconditional and clean exemption". The exemption here, unlike in the IAEA, will have to be consensual. And even gun-boat diplomacy, or some civilian equivalent of it, has its limits. In the meanwhile, domestic opposition within the US seems to be picking up. Howard Berman, the Chairman of the House of Representatives foreign affairs committee, has strongly objected to such exemption.

Consequent to the IAEA approval, the NSG is expected to take up the issue on August 21.

We have here carried three articles and five statements/letters on

this issue to facilitate an in-depth understanding of the issue having been examined from multiple angles, and also to provide an appraisal of the current stage of struggles against the deal.

The only point that bears repetition here is that, as one of our contributors has drawn our attention to, "a frightening consensus in the [Indian] political mainstream" has emerged as regards the (desirability of the) Bomb and also nuclear power regardless of support or opposition to the deal. That's a point the peace movement has got to adequately factor in.

Our intense engagement with the deal must not, however, detract us from the broader goal of global nuclear disarmament. With the next NPT review meeting in 2010 fast approaching, various strands of global peace movements are girding up their loins to provide a vigorous push towards that final goal, notwithstanding the inherent flaws in the NPT.

Apart from the people's movements, a governmental move that has drawn considerable attention is the recent formation of an 'International Commission on Nuclear Non-Proliferation and Disarmament' initiated by Australian Prime Minister Kevin Rudd and co-chaired by Japan, represented by Ms Yoriko Kawaguchi. But the credibility and success of the move will largely depend on how it sets its agenda.

We have an article specifically dealing with this promising development. And few other articles and an appeal on this broader issue.

We have an article also on South Asian nuclear disarmament and how and why the smaller countries must take the lead given the roguish conduct of the largest two.

And there is a review of a seminal work on nuclear power synopsis-ing its contents.



II. Global Nuclear Disarmament: Challenges and Prospects

A. Toward the 2010 NPT Review Conference

*Appeal for a Nuclear Weapon-Free World **

Even now, in the 21st Century, world peace and security are still threatened by 26,000 nuclear weapons.

As the tragedies of Hiroshima and Nagasaki show us, nuclear weapons instantly destroy countless lives, torment people in future generations, and ruin civilizations.

The Hibakusha, the A-bomb survivors, continue to warn that humanity cannot coexist with nuclear weapons. Never again should we create more victims of nuclear weapons.

For the survival of the human race and for the future of our children, let us achieve a world free of nuclear weapons through our actions in solidarity.

Towards the 2010 Nuclear Non-Proliferation Treaty Review Conference, the nuclear weapons states are called to honor the "unequivocal undertaking" of May 2000 to eliminate their nuclear weapons.

We call on the nuclear weapons states and all other governments to agree to commence and conclude negotia-

tions of a treaty, a nuclear weapons convention, to ban and eliminate nuclear weapons without delay.

** This Appeal is issued on August 6, 2008, by the representatives assembled in Hiroshima from around the world at the 2008 World Conference against A & H Bombs. The signature drive is under way worldwide, and the petitions will be presented to the next NPT Review Conference to be held in Spring 2010 in New York.*



B. Nuclear Weapons and Future Justice

*David Krieger ***

Future justice requires that the inhabitants of the future be treated justly and equitably. This implies that our current social, economic and political relations, both nationally and internationally, must become more just and equitable. It also adds an explicit focus on the longer-term consequences of these relations.

Many indigenous peoples lived with an ethic of considering present impacts on the "seventh generation." Modern societies have been far less respectful of those who will follow us on Earth, as the expanding population of the planet combined with our greed for natural resources and the power of our technologies

has exponentially increased the human impact on Earth and future generations.

We need an ethic that expands our concept of justice to generations yet unborn. We need to recognize and appreciate the extent to which our decisions and acts in the present have serious, potentially irreversible consequences for the future. In the 1990s, the Cousteau Society, led by respected ocean explorer Jacques Cousteau, developed and promoted A Bill of Rights for Future Generations.

Its five articles are:

Article 1. *Future generations have a right to an uncontaminated and undamaged Earth and to its enjoyment as the ground of human*

history, of culture, and of the social bonds that make each generation and individual a member of one human family.

Article 2. *Each generation, sharing in the estate and heritage of the Earth, has a duty as trustee for future generations to prevent irreversible and irreparable harm to life on Earth and to human freedom and dignity.*

Article 3. *It is, therefore, the paramount responsibility of each generation to maintain a constantly vigilant and prudential assessment of technological disturbances and modifications adversely affecting life on Earth, the balance of nature, and the evolution of mankind in order to protect the rights of future generations.*

Article 4. *All appropriate*

measures, including education, research, and legislation, shall be taken to guarantee these rights and to ensure that they not be sacrificed for present expediencies and conveniences.

Article 5. Governments, non-governmental organizations, and individuals are urged, therefore, imaginatively to implement these principles, as if in the very presence of those future generations whose rights we seek to establish and perpetuate.

To enforce such a set of rights for future generations, we need to create a criminal conceptualization that designates the worst offenses against these rights - those that would foreclose the future altogether or that would make life on the planet untenable - as crimes against future generations.

Two areas of human activity that would clearly fit into this category of foreclosing the future are nuclear war and climate change. Both have the potential to destroy human life on our planet, along with much other life.

Responsibilities Toward Future Generations

Rights cannot exist in a vacuum. Along with rights, there must be concomitant responsibilities, including responsibilities to ensure the rights of future generations. On Nov. 12, 1997, the United Nations Educational, Scientific and Cultural Organization solemnly proclaimed the UNESCO Declaration on the Responsibilities of Present Generations Towards Future Generations. Two of its 12 articles closely relate to preserving a human future and a future for

life on the planet:

Article 3. Maintenance and perpetuation of humankind - The present generations should strive to ensure the maintenance and perpetuation of humankind with due respect for the dignity of the human person. Consequently, the nature and form of human life must not be undermined in any way whatsoever.

Article 4. Preservation of life on Earth - The present generations have the responsibility to bequeath to future generations an Earth which will not one day be irreversibly damaged by human activity. Each generation inheriting the Earth temporarily should take care to use natural resources reasonably and ensure that life is not prejudiced by harmful modifications of the ecosystems and that scientific and technological progress in all fields does not harm life on Earth.

The declaration calls for "intergenerational solidarity." Such solidarity with future generations requires that current generations take responsibility for ensuring that the policies of those in power today will not lead to foreclosing the future for generations yet to be born.

Thus, the importance of conceptualizing crimes against future generations cannot be evaded by the people of the present. A strong example of such crimes can be found in policies promoting the possession, threat or use of nuclear weapons.

Nuclear Weapons Possession as Criminal Behavior

The philosopher John Somerville coined a new term for the potential of nuclear weapons: omnicide, the death of all. He reasoned that humans had moved from suicide to genocide to the poten-

tial of *omnicide*. The threat or use of nuclear weapons constitutes the ultimate crime against the future, omnicide, including the destruction of the human species.

In 1996, the International Court of Justice issued an advisory opinion on the legality of the threat or use of nuclear weapons: "The destructive power of nuclear weapons cannot be contained in either space or time. They have the potential to destroy all civilization and the entire ecosystem of the planet." The international court found that "the use of nuclear weapons would be a serious danger to future generations." Even setting aside the blast effects of nuclear weapons, it found, "Ionizing radiation has the potential to damage the future environment, food and marine ecosystem, and to cause genetic defects and illness in future generations."

The international court unanimously concluded that any threat or use of nuclear weapons that violated international humanitarian law would be illegal. This meant that there could be no legal threat or use of nuclear weapons that was indiscriminate as between civilians and combatants, that caused unnecessary suffering or that was disproportionate to a prior attack.

While there could be virtually no threat or use of nuclear weapons that did not violate international humanitarian law, the international court also found on a split vote that "in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat

or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defense, in which the very survival of a State would be at stake."

In light of the above conclusions, the international court found unanimously, "There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control." Thus, the international court was clear in reaffirming the obligation to nuclear disarmament in Article VI of the Nuclear Non-Proliferation Treaty. Unfortunately, the political leaders of the nuclear weapons states have not fulfilled their obligations under international law.

Today, nine states in the world are known to possess nuclear weapons: the U.S., Russia, the U.K., France, China, Israel, India, Pakistan and North Korea. If we know that nuclear war could foreclose the future and would be a crime against future generations, does that make the *possession* of nuclear weapons by these states a crime against the future?

Arguably, possession alone, without use or threat of use, is not a crime. But to take the inquiry one step deeper is it possible to have possession without at least the implicit threat of use? In order to eliminate the possibility of threat or use of nuclear weapons, a state at a minimum would need to have a policy of "no first use" and to separate its warheads from delivery vehicles so that there could be no inadvertent use of the weapons.

While this would be better nuclear policy than one that leaves open the possibility of first use, it would not eliminate the possibility of a second use of the weapons, which could escalate a nuclear war, kill great numbers of innocent civilians, affect the health of children of the victims and even place the future of humanity at risk. Thus, the conclusion seems inescapable that the possession of nuclear weapons by a state undermines future justice and constitutes a continuing crime against future generations.

The possession of nuclear weapons can be viewed as a crime of state, and this crime would apply to the states possessing nuclear weapons. But beyond state criminal activity, there should also be culpability for the crime against the future by the leading state and military officials that support and promote nuclear weapons possession, as well as policies that make nuclear war more likely and total nuclear disarmament less likely. In addition, corporations, corporate executives and scientists who contribute to the maintenance and improvement of nuclear weapons should also be considered culpable for committing a crime against future generations.

It is fundamental to criminal law that individuals have culpability for crimes and that individual accountability not be covered over by state or corporate culpability. At the Nuremberg Trials following World War II, the principle was upheld that all individuals who commit crimes under international law are responsible for such acts, even if they are high government officials and

domestic law does not hold such acts to be crimes. Along with responsibility goes individual accountability for crimes against future generations.

The Need for a Taboo

In the present global environment, the possession of nuclear weapons is not viewed as a crime against future generations or even broadly as a crime against the present but rather as normal behavior by powerful states. In addition, the existence of these weapons in the arsenals of some states creates pressures for other states to acquire such weaponry.

It is essential to establish a norm that the possession of nuclear weapons is a crime against future generations, a crime that can be prevented only by the total elimination of these weapons. A taboo must be established that puts nuclear weapons in the same category of unacceptable behaviors as cannibalism, incest, slavery and torture and that ostracizes those who contribute to maintaining these weapons or who set up obstacles to their elimination.

There are some signs of hope:

- More than half the world, virtually the entire Southern Hemisphere, is covered by nuclear weapons-free zones.
- Former high-level U.S. policymakers, including former Secretaries of State Henry Kissinger and George Shultz, former Secretary of Defense William Perry and former Chairman of the Senate Armed Services Committee Sam Nunn,

have spoken out in favor of a world free of nuclear weapons.

- Norway's government pension fund has set an example by divesting from companies providing components for nuclear weapons.
- Legal measures to return to the International Court of Justice are being taken to challenge the lack of progress on nuclear disarmament obligations.
- Leading scientists, including the late Nobel laureates Hans Bethe and Joseph Rotblat, are calling on scientists in all countries to cease working on nuclear weapons and other weapons of mass destruction.
- U.K. Secretary of State for Defence Des Browne has

proposed a conference of the five principal nuclear weapons states to address the technical challenges of verifying nuclear disarmament.

While these signs of hope hold promise, far more needs to be done to establish a taboo against the possession, threat and use of nuclear weapons that will result in a world without them. Such organizations as the World Future Council, of which I am a councilor, need to take a leadership role in promoting the concept of future justice and crimes against future generations and in identifying those particular crimes, such as nuclear war and the antecedent possession, threat or use of nuclear weapons, which are capable of foreclosing the future.

Among the tools needed to succeed in passing on the world intact to future generations is the identification of crimes against future generations to underpin the establishment of taboos against such crimes. Also needed is a system of accountability to ostracize and otherwise punish individuals, regardless of their office, who are engaged in the preparation or commission of such crimes. Future justice is not a possibility in a world without a future.

*** David Kriegar is the head of the nonprofit Nuclear Age Peace Foundation, which calls for global nuclear disarmament, suggests criminalizing the mere possession of nuclear weapons.*

[Source: <http://www.miller-mccune.com/article/434>.]



C. Looking Back

The Nuclear Nonproliferation Treaty

Then and Now

George Bunn and John B. Rhinelander **

Less than a year after dropping nuclear bombs on Hiroshima and Nagasaki in 1945, the United States adopted a statute prohibiting the transfer of its nuclear weapons to any other country. It was not until 23 years later, however, that countries began signing an international treaty that prohibited the transfer of nuclear weapons by a country that had them to any other country, indeed "to any recipient whatsoever." [1] On July 1, 1968, the United States, the Soviet Union, the United Kingdom, and many other

countries signed the nuclear Nonproliferation Treaty (NPT) at ceremonies in Washington, Moscow, and London. Subsequently, nearly 190 countries have signed and ratified the treaty aimed at preventing the spread of nuclear weapons from the few countries that then had them to the many that did not and at reducing and eventually eliminating nuclear weapons from the world.

The 40th anniversary of the NPT provides an opportunity to re-examine the history of the treaty's negotiation and

ask what lessons it offers for today.

The NPT's Negotiating History

The NPT's history really began in 1946. That year, the Department of State and some of the scientists who had made the bomb drew up the Acheson-Lilienthal Report, which, with major revisions, became a formal U.S. proposal to the United Nations known as the Baruch Plan. It proposed that the United States turn over control of all its enriched uranium, including that in any nuclear

weapons it had, to a new UN body (over which the United States and the other permanent members of the Security Council would have a veto) and that all countries in the world should be prohibited from possessing their own nuclear weapons. The Soviet Union opposed this plan, and the UN committee created to consider it got nowhere.[2]

The next stab at controlling nuclear weapons proliferation came in 1953 when President Dwight Eisenhower proposed to the UN General Assembly the negotiation of a treaty that would seek to control nuclear activities around the world and prevent, if possible, the spread of nuclear weapons to additional countries. This led to negotiations that finally produced a useful treaty, though one that fell short of what Eisenhower had proposed. This treaty, the Statute of the International Atomic Energy Agency (IAEA) of 1956, authorized creation of the IAEA and gave it the responsibility for providing information and assistance to countries seeking to use nuclear energy for peaceful purposes and for performing inspections of their nuclear facilities to ensure that the operators did not divert from peaceful purposes to weapons production the uranium fuel used to run nuclear reactors and the plutonium that was produced in such reactors.[3]

The NPT negotiations themselves really got started after the unanimous approval of a 1961 UN General Assembly resolution on negotiation of a treaty that would ban countries without nuclear weapons from acquiring them and that would

require the inspections that the IAEA treaty only authorized. In particular, the resolution asked the countries "possessing nuclear weapons" to "undertake to refrain from relinquishing control of nuclear weapons and from transmitting information necessary for their manufacture" to nations not possessing nuclear weapons. Second, it recommended that states not possessing nuclear weapons "undertake not to manufacture or otherwise acquire control of such weapons." It urged nuclear-weapon and non-nuclear-weapon states to "cooperate to those ends." [4]

The same year marked another step that had an important but indirect effect on the creation of the NPT. At President John Kennedy's request, Congress approved legislation establishing the Arms Control and Disarmament Agency (ACDA) to replace the State Department in the research, planning, and negotiation of arms control and disarmament treaties. Soon after the ACDA's creation, its leaders sought authority from Secretary of State Dean Rusk and Kennedy to negotiate with the Soviets an agreement intended to prevent the spread of nuclear weapons to additional countries. This authority was granted after negotiations within the U.S. government and with U.S. allies produced a modified draft treaty.

By forming an institution separate from the State Department that would handle negotiations regarding a treaty such as this, Kennedy also created a means to sidestep opposition in Foggy Bottom to the NPT and win support from others in the executive branch and

Congress. The State Department had long supported establishment of a multilateral force (MLF) composed of ships owned by several NATO countries, including the United States, armed with U.S. nuclear weapons and manned by officers and sailors from the United States and other participating NATO countries. Some State Department officials had insisted that U.S. officers and sailors on MLF ships would retain control of the U.S. nuclear weapons. However, other State Department officials and some allies felt that the MLF effort would be endangered if a new treaty prohibited transfer of control of nuclear weapons to any other entity, such as an MLF ship with officers and sailors from countries not having nuclear weapons or that had an MLF "board of directors" that included many allies that did not have nuclear weapons.

In 1962, Rusk showed Soviet Foreign Minister Andrei Gromyko a simple U.S. draft nonproliferation agreement based on the 1961 General Assembly resolution, which the Soviets had not opposed. The draft did not mention the MLF but would not have prohibited it. Gromyko rejected Rusk's proposal without even consulting Moscow. How much this action was based on Gromyko's knowledge that NATO members were considering the MLF proposal was not clear, but there had been many private discussions about the MLF proposal among NATO members. Leaks to representatives of non-NATO countries seemed likely.

At the Disarmament Committee that followed this Rusk-Gromyko meeting,

Gromyko focused on a broad Soviet proposal for "general and complete disarmament," including complete nuclear disarmament, not on the General Assembly nonproliferation resolution.[5] Given Gromyko's reaction and the interest of West Germany and others in the MLF proposal, negotiations to implement the 1961 General Assembly resolution calling for an NPT stalled for several years, but so did NATO-country negotiations to create an MLF armed with nuclear weapons.

After the 1962 Cuban missile crisis, U.S.-Soviet tensions relaxed somewhat, and serious negotiations to produce a ban on nuclear weapons tests produced U.S.-Soviet agreement on the Limited Test Ban Treaty of 1963 (limited because it did not ban nuclear weapons tests underground). Still, the possibility of a successful negotiation of an MLF agreement with U.S. allies seemed likely to make successful negotiation of an NPT with the Soviets impossible. ACDA officials were concerned that the United States would get neither an MLF nor an NPT unless some way to break this stalemate could be found.

Indeed, it took three years of failure both in the MLF negotiations and the NPT negotiations to produce a U.S. decision to give up on an MLF and pursue an NPT alone. Then, the ACDA was authorized to try to negotiate with the Soviets a draft NPT with a provision prohibiting the five nations then having nuclear weapons (China, France, the Soviet Union, the United Kingdom, and the United States) from transferring control over any of their nuclear weapons to anyone. As finally

negotiated, this provision also called on these five nations not to "assist, encourage or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear explosive weapons, or control over such weapons or explosive devices." Moreover, the nations not having nuclear weapons that joined the treaty had to agree not to receive or manufacture or "otherwise acquire nuclear weapons...and not to seek or receive any assistance" in their manufacture.[6]

With this new U.S. formula in hand, U.S.-Soviet negotiations over a draft NPT finally began in earnest in Geneva. Later, Rusk and Gromyko met in New York to discuss further NPT negotiation possibilities, and it became clear that the Soviets were now interested in such talks. In September 1966, a U.S.-Soviet working group, which included one of the authors of this article, came up with three possible drafts of an NPT prohibition on the transfer of nuclear weapons that the Americans and the Soviets could present to their governments.

President Lyndon Johnson also authorized ACDA negotiators to present a draft no-transfer treaty provision to the West German government, probably the most important U.S. ally in Western Europe that the NPT would ban from having nuclear weapons. Johnson had good reason to be concerned about the reaction of the West Germans. They had already done considerable work related to building nuclear power reactors, and some in the West German government appeared to support research into nuclear weapons production, given that U.S.

nuclear weapons were stationed with U.S. troops on West German territory. The British and the French already had nuclear weapons and would be accepted as NPT nuclear-weapon states in the U.S.-Soviet staff-proposed drafts. No other U.S. allies then seemed both seriously interested in and clearly capable of making nuclear weapons.

Fortunately, after further prolonged negotiations with the United States as well as with other NATO allies, the West Germans finally came around. They signed the NPT as a non-nuclear-weapon state, thus obligating themselves not to acquire nuclear weapons. Without West Germany's NPT promise not to acquire nuclear weapons, the Soviets would not have accepted an NPT. The Soviets had already complained about U.S. nuclear weapons deployed with U.S. forces in West Germany, weapons that were guarded by U.S. troops. The Soviets were not about to agree to a treaty permitting West Germany to control any nuclear weapons.

These further negotiations with the West Germans and other U.S. allies produced a consensus on a U.S. proposal to submit to the Soviet negotiators. With changes resulting from further negotiations both with the Soviets and our interested allies, we produced a final draft of the NPT to present at the Geneva-based Eighteen Nation Disarmament Committee and the UN General Assembly in 1968. This included provisions recommended by the eight non-aligned countries represented at the Geneva disarmament conference, including India, such as Article IV, which provides that

the NPT "shall" not be interpreted as "affecting the inalienable right" of all NPT parties "to develop research, production and use of nuclear energy for peaceful purposes without discrimination."

The NPT Today

The 1968 NPT permitted the five states that had tested nuclear weapons to keep these weapons for the time being but obligated them under Article VI to negotiate to reduce and ultimately eliminate them. The treaty also prohibited other states-parties from acquiring nuclear weapons.[7] Forty years after the signing of the NPT, it is a worldwide treaty joined by more than 180 countries that do not have nuclear weapons as well as the five that had tested them by 1968. Russia has taken the place of the Soviet Union as one of the five nuclear-weapon states, and the 14 other former Soviet republics that became independent have become non-nuclear-weapon states-parties to the NPT.

Today, the most important NPT provision that has not been well observed is Article VI, the obligation of the five nuclear-weapon states "to negotiate in good faith on effective measures relating to the cessation of the nuclear arms race at an early day and to nuclear disarmament."

In 2007, when she was the United Kingdom's foreign minister, Margaret Beckett called for negotiators to take additional steps toward nuclear disarmament. She said, "The judgment we made 40 years ago [at the NPT's signing] that the eventual elimination of nuclear weapons was in all our interests is just as

true today as it was then. For more than 60 years, good management and good fortune have meant that nuclear arsenals have not been used, but we cannot rely just on history to repeat itself." [8]

It is true that on occasion nuclear-weapon states have taken advantage of NPT treaty review conferences to reiterate their intention to seek nuclear reductions. Yet, no serious nuclear-weapon reductions have taken place that include all five states permitted by the NPT to possess nuclear weapons. The Bush administration has been no exception. Unlike previous administrations, the current administration has made only a small effort to negotiate nuclear weapons reductions with Russia at a time when the two countries still control more than 95 percent of the nuclear weapons in the world. The U.S.-Russian nuclear reduction treaty (the Strategic Offensive Reductions Treaty) signed by the presidents of the two countries during the Bush administration calls for the removal from active deployment of some nuclear warheads, but it does not require their elimination.

Instead of negotiating agreed nuclear weapons reductions, the Bush administration has announced a wide range of potential uses for nuclear weapons, greater than any past U.S. administration seems to have announced.[9] In addition, the administration did not accept prior commitments by earlier U.S. administrations that limit the use of nuclear weapons against non-nuclear-weapon countries, including commitments that the United States will not use nuclear weapons against

countries that have agreed that they will not acquire nuclear weapons.[10] In brief, the Bush administration has done little to carry out the U.S. obligation to pursue "nuclear disarmament" mandated by Article VI.

Early this year, Congress passed legislation calling for the executive branch to conduct a thorough review of U.S. nuclear weapons policy by the end of the first year of the next administration. This review, Congress said, must describe the new U.S. administration's "assessment of the role of nuclear forces in military strategy"; its "objectives...to maintain a safe, reliable and credible nuclear posture"; and its views of the "relationship among U.S. nuclear deterrence policy, targeting strategy, and arms control." This would mark the first such re-examination since the Bush administration's 2002 Nuclear Posture Review, which stated a new U.S. policy of relatively free use of nuclear weapons against countries that are hostile to the United States even though they do not have nuclear weapons.[11]

In addition, three important states (India, Israel, and Pakistan) refused to join the NPT in 1968 when it was opened for signature, and they eventually produced nuclear weapons. Despite its refusal to join the NPT and its acquisition of nuclear weapons, India has been rewarded by the Bush administration by a proposed U.S.-India agreement that, if implemented, would appear to violate current U.S. law and be inconsistent with agreed international guidelines.

North Korea did join the NPT as a non-nuclear-weapon

state but later withdrew and tested a nuclear weapon that appeared to be in part the product of its nuclear weapons research activities conducted while it was an NPT state-party. Several countries, most prominently South Africa, abandoned their nuclear weapons-making efforts and joined the NPT.

Negotiations to persuade North Korea to give up its nuclear weapons began in the Clinton administration and, after a long pause, were taken up again by the Bush administration. Several preliminary agreements have been signed. However, North Korea has not yet carried out its promise to eliminate its nuclear weapons. Iran, while a member of the NPT, has a uranium-enrichment program that began in secrecy 20 years ago and remains ambiguous as to its purpose: weapons, peaceful uses, or both. Negotiations with Iran remain stalemated.[12]

Conclusion

The nuclear nonproliferation regime is at a crossroads. If it is to be saved and reinvigorated, the next U.S. president must take the lead at the start of his administration, January 20, 2009.

First, the president should outline a plan to strengthen the nuclear nonproliferation regime to Congress, to the U.S. public, and to foreign leaders. We hope he will include the Shultz-Perry-Kissinger-Nunn proposals in the Wall Street Journal calling for deep cuts in nuclear weapons around the world.[13] This is, of course, one vision of what serious planning and successful negotiation of a nuclear weapons reduction agreement pursuant

to Article VI could produce.

Second, the next U.S. president should propose early concrete steps for U.S.-Russian cooperation and nuclear reductions. The United States should propose additional reductions beyond SORT and the continuation of START verification measures. It is self-evident that positive relations between the United States and Russia will be central both to specific near-term actions and to the vision of a world free of nuclear weapons.

Third, the next U.S. president should extend these talks to include the other nuclear-weapon states. At a time that U.S.-Russian arms reduction talks have effectively stalled out, it may seem disingenuous for the two countries that control more than 95 percent of the nuclear weapons in the world to invite the "Three" (China, France, and the United Kingdom) to join their occasional nuclear weapons reduction negotiations. However, early agreements between Russia and the United States and then among the five nuclear-weapon states on steps toward nuclear disarmament are essential to satisfy the non-nuclear-weapon NPT members that these two countries are complying with their Article VI obligations. Significant compliance with this obligation is important to forestall further proliferation by non-nuclear-weapon countries and to keep some of them from withdrawing from the NPT.

Fourth, the United States should establish a serious dialogue with China on nuclear weapons issues. This is essential to steps that China and the United States, joined by others, should take in pursuit of

nuclear disarmament.

Fifth, the next president should appoint a nonproliferation "czar" before inauguration day. The czar would work with the president-elect on his policy positions and be the leader of the president's effort to enact legislation creating a new agency to focus on nonproliferation and arms reduction negotiations. In the Kennedy, Johnson, Nixon, Carter, Reagan, and Clinton administrations, the ACDA led the U.S. effort to negotiate an NPT and other important treaties to limit nuclear arms. The ACDA was separate from the State Department but under the general direction of the secretary of state (but not the rest of the State Department) as well as the president.

Unfortunately, conservatives in Congress during the last years of the Clinton administration succeeded in abolishing the ACDA and placing its employees back in the State Department. This meant that the personnel responsible for negotiations to prevent the spread of nuclear weapons were more likely to be influenced by State Department personnel responsible for specific regions of the world. State Department personnel focused on other subjects than preventing the spread of nuclear weapons and on other regions than those where that spread is a matter of particular concern. This happened in the case of the recent U.S.-Indian agreement that was to provide major nuclear assistance to India despite its pursuit of nuclear weapons, a pursuit which earlier U.S. administrations had tried hard to prevent and then slow. In negotiating the U.S.-Indian agreement, State

Department officials overrode or ignored established arms control concerns in their eagerness to reach an unsound agreement.

Sixth, the 2006 U.S.-Indian nuclear agreement should be set aside. It seems to be stalled now by political opposition within India, and it will not likely come before the U.S. Congress for approval this year. If it went into force one day, it could help undermine the NPT regime. Instead, India should become a key actor in pursuit of the goal of a world free of nuclear weapons, a goal that former Prime Minister Rajiv Gandhi urged so eloquently at the UN.

In conclusion, it should not be forgotten that the NPT has been the primary rulemaker that has prevented the spread of nuclear weapons around the world. Many countries have nuclear research reactors and a sufficient industrial base to at least begin pursuing nuclear-weapon activities. Without joining the NPT, India, Israel, and Pakistan have become nations with nuclear weapons. North Korea, not well developed industrially, produced fissile material for nuclear weapons and then withdrew from the NPT. Libya, although a member of the NPT, started development of nuclear weapons but, with efforts by other countries to enforce the norm of the NPT and some financial assistance, was persuaded to stop that effort. In the Middle East, we saw Iraq pursuing nuclear weapons in the 1980s and 1990s. It took a UN-Iraq war to stop that effort. Subsequently, the existence of the NPT made it possible for the UN Security Council to demand strict disarmament requirements in a post-

war cease fire. We have seen what may be nuclear weapons-making efforts in Iran and Syria. Additional NPT members in that region of the world, where non-nuclear sources of energy such as oil are readily available, have expressed interest in building nuclear power reactors. Does their nuclear interest go beyond power reactors?

What would the world look like if there were no NPT? It has provided the standard that has restrained many countries from pursuing nuclear weapons. Without it, would there be 20 or 30 countries with nuclear weapons or pursuing nuclear weapons?

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4. UN General Assembly Resolution 1665, December 4, 1961 (the "Irish Resolution").
5. See Bunn, "The Nuclear Nonproliferation Treaty: History and Current Problems," *Arms Control Today*, December 2003, p. 5.
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pp. 87-103; U.S. Arms Control and Disarmament Agency, *Arms Control and Disarmament Agreements: Texts and Histories of Negotiations (1980)*, pp. 82-83.

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9. Amy F. Woolf, "Nuclear Weapons in the U.S. National Security Policy: Past, Present, and Prospects," CRS Report for Congress, October 29, 2007, p. 10.

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[Source: <http://www.armscontrol.org/act/2008_07-08/lookingback.asp>.]



D. Japan and the Future of Nuclear Disarmament

Masako Toki **

Australia's Prime Minister Kevin Rudd's entry in the visitors' book at the Hiroshima Peace Memorial Museum [in early June 2008] may not sound so astonishing or dramatic. His words -- "Let the world resolve afresh, from the ashes of this city, to work together for the common mission of peace for this Asia-Pacific century, and for a world where nuclear weapons are no more" -- sound like many other entries written in the visitors' book after people learned the truth of the effect of the use of nuclear weapons against humanity.

But Rudd is different. He is the first Australian prime minister to visit the Hiroshima Peace Memorial Museum. And he acted on his words in a way that many other visitors have not. In large part as a reaction to his visit to Hiroshima, Rudd announced the establishment of a new nuclear disarmament commission on June 9 in a speech at Kyoto University. The commission will be co-chaired by former Australian foreign minister, Gareth Evans. Rudd went on to praise Japan's long-standing initiatives in the nuclear disarmament and non-proliferation arena, and called for Japan to take a significant role in the commission.

The Australian proposal comes at a critical time. Fifteen years after the end of the Cold War, more than 20,000 nuclear warheads remain in the arsenals of the nuclear powers, 10,000

of which are actively deployed. The Nuclear Non-Proliferation Treaty (NPT) regime faces the greatest challenge in its 40-year history. New proliferation threats have emerged from Iran and North Korea. The possible acquisition of nuclear material or weapons by terrorist groups and clandestine nuclear networks poses a serious threat to the international community. The Bush administration has pushed hard for new nuclear weapons, while China has been modernizing its nuclear arsenal. Moreover, because of the expansion of missile defense systems in Europe and Asia, a new arms race in these regions looms.

The NPT regime came close to collapse at the 2005 Review Conference, which magnified the divergence of opinion between nuclear haves and have-nots with regard to treaty obligations. Against this backdrop, however, the global nuclear disarmament movement has regrouped and even regained some of its previous momentum. One of the most prominent developments in the area of nuclear nonproliferation and disarmament is the initiative of four former high-ranking U.S. officials - George Shultz, William Perry, Henry Kissinger, and Sam Nunn - to establish a world free of nuclear weapons. These realists who once supported nuclear weapons have come to understand that the existence of nuclear weapons is counterproductive to national and international security.

Rudd's new initiative represents an international effort to realize this vision. The new commission will assess progress made toward the goal of nuclear elimination, and what still needs to be done. Moreover, the commission will develop an action plan for the future to help pave the way for a successful NPT review conference in 2010. But this effort will only succeed with the support of the major nuclear powers and more assertive stances from non-nuclear powers like Japan.

Australia plus Japan Initiative

Both Japan and Australia are strong supporters of nuclear nonproliferation regimes. In his speech in Kyoto, Prime Minister Rudd stated that "Japan and Australia working together can make a difference in the global debate on proliferation. We are uniquely qualified. Japan remains the only state to have experienced the consequences of nuclear weapons. Japan today has a large nuclear power industry. Australia has the largest known uranium reserves in the world. We can, therefore, understand the concerns that countries bring to this debate. And we share a view of the importance of the NPT."

Not surprisingly, then, Japanese Prime Minister Yasuo Fukuda initially welcomed Rudd's proposal to establish a new nonproliferation and disarmament commission. Given

the leading role that it has played in the global disarmament movement, however, Japan needs to do more to support Australia's bold initiative. Every year since 1994, Japan has submitted a draft resolution on nuclear disarmament to the annual UN General Assembly. After the failure of the 2005 NPT Review Conference, Japan redoubled its efforts and gave its resolution the new title of "Renewed determination towards the total elimination of nuclear weapons." Japan's draft resolutions have received almost unanimous support. In the past few years only the United States, India, and North Korea voted against it.

Despite its declared policy for nuclear disarmament, Japan is struggling between two seemingly contradictory security principles. On the one hand, Tokyo is protected under the U.S. nuclear umbrella. On the other, the country strongly supports the movement toward a world free of nuclear weapons. Australia is in a similar position. In the current international security environment, alliance with the United States for both countries may well be necessary. But this security arrangement may also constrain both countries from taking a more vocal position for nuclear abolition. For instance, neither country has officially supported a specific time frame for disarmament backed by the countries of the Non-Aligned Movement.

Addressing Challenges

Given the Rudd proposal, the initiatives of Shultz and company, and growing support for these efforts, the world stands at a rare and extraordi-

nary moment of opportunity to pursue nuclear disarmament. But the major nuclear powers need to take the first steps.

This February, UK Secretary of State for Defense Des Browne introduced a technical cooperation initiative between the UK's Atomic Weapons Establishment and the Norwegian government to develop technology to verify warhead dismantlement. As a next step, the UK offered to host a technical conference on nuclear disarmament verification before the 2010 NPT Review Conference.

However, this British initiative will not mean very much if the United States and Russia don't engage in serious nuclear reductions. Many challenges related to global nuclear weapons and nuclear nonproliferation regime can be attributed to the U.S. security policy over the last eight years. A change of U.S. administration could be a turning point. Both presidential candidates embrace binding and verifiable arms control treaties. The United States and Russia, which possess almost 90 % of world nuclear weapons, need to reduce their arsenals through such a treaty.

On the multilateral front, a Comprehensive Nuclear Test Ban Treaty (CTBT) and a Fissile Material Cut-off Treaty (FCMT) are essential to cap the development of nuclear weapons both qualitatively and quantitatively. But the U.S. Senate voted not to support the CTBT in 1999, and the Bush administration continues to oppose the treaty.

The unstable regional security situations in the

Middle East, East Asia, and South Asia also negatively affect progress in nuclear disarmament. The opaque intentions of Iran, complicated by its refusal to fully comply with International Atomic Energy Agency (IAEA) and Security Council resolutions, suggest that Iran may soon be able to develop nuclear weapons. Speculation of a possible U.S. attack has increased as Iran continues to defy demands that it halt its uranium enrichment program.

We have seen a variety of disarmament initiatives to tackle these challenges. The ultimate influence of such initiatives, including the Australian proposal, remains unclear. These initiatives could create a norm against nuclear weapons and generate massive opposition against nuclear weapons from civil society, which could eventually influence the governments of nuclear weapon states. In addition, Japan and Australia could work more closely with the EU member states and non-nuclear NATO countries including Canada. Since all of these countries support the CTBT, they may be able to collectively apply pressure on the United States to ratify the treaty.

Nuclear disarmament should also be considered in the context of enhancing regional and global peace and security. In this regard, it is essential for Japan to increase its efforts to enhance regional security in East Asia through confidence-building measures and improving relations in the region, especially with China.

Participation of Civil Society

Civil society is a key to harmonizing the various disarmament efforts. Japan can be a leader in this respect. As the only country that experienced atomic bombings, Japan has the invaluable asset of the hibakusha, the survivors of the atomic bombings. Their average age is now over 74. It is important for the next generation to come to understand the importance of nuclear disarmament by learning through the first-hand accounts of the hibakusha witnesses about the effects of nuclear weapons on human beings.

Hiroshima and Nagasaki are vigorously setting up atomic bomb exhibitions and sending hibakusha to share their testimony to many countries, especially to the United States. They are not traveling all around the world to dwell on the past but to talk about the future based on their experience. Given the age of the hibakusha, the 2010 NPT Review Conference may be the last opportunity for them to see any development in nuclear disarmament. Testimony based on the experience of hibakusha, and their aspiration to share the truth of the effect of the use of nuclear weapons on human beings, is one of the strongest and most compelling messages for a world free of nuclear weapons.

There have been several noteworthy events in the history of civil society's involvement in nuclear disarmament. For instance, the World Court Project, initiated in 1992, led the International Court of Justice to issue its advisory opinion regarding the legality of

the use and threat of use of nuclear weapons in 1996. In the early stages of the nuclear arms race, a large number of people protested against what were then ubiquitous nuclear weapon tests. Without these steadfast protests from civil society there might have not been a conclusion to the Comprehensive Test Ban Treaty.

Civil society's activities for nuclear disarmament are transnational. The question is how influential and significant civil society can be in making progress in nuclear disarmament. Civil society has participated in the multilateral arms control processes in a variety of ways. The consistent activities by civil society could increase momentum toward nuclear disarmament and reframe the debate over nuclear weapons policy.

What Tokyo Should Do

Tokyo should not miss this opportunity to seize the moment and revitalize the disarmament movement. Even under the nuclear umbrella, Japan should be more assertive. To break the dilemma of being under the umbrella and yet calling for disarmament, Japan must spread the facts of the inhumanity of nuclear weapons by sharing more of the hibakusha experience. This initiative can be a great opportunity to create a stronger momentum in nuclear disarmament involving civil society.

Under the current U.S. administration, particularly after September 11, the United States has placed more emphasis on "coalitions of the willing", unilateral initiatives, and

preemptive action, and less on formal multinational institutions shaped over the past decades. Due to Japan's increasing role in international security and the U.S.-Japan alliance, Japan has faced an increasingly complicated dilemma in the last few years between its support of multilateralism and its reliance on the alliance with the United States.

However, with the coming change in the U.S. administration, which may see Washington restore support for multilateral institutions, the next few years could provide a great opportunity for both Japan and the United States to explore a new way to work together to strengthen multilateral nonproliferation and disarmament regimes. Japan and the United States have been already working together in the field of nonproliferation, counter-proliferation, and even counter terrorism. However, cooperation in the field of nuclear disarmament has been virtually nil. With a new U.S. president, perhaps one who unequivocally supports CTBT, Japan and the United States may enter a new phase of cooperation to strengthen the NPT regime and to achieve a goal of a world free of nuclear weapons.

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III. Nuclear Weapons and South Asia

Someone else's weapons

Zia Mian **

A nuclear - weapons - free Southasia must be championed by the smaller countries.

In May 1998, first India and then Pakistan tested nuclear weapons. War erupted in the Kargil region of Kashmir a year later. This was the first war between two nuclear-armed states anywhere in the world, and raised the prospect that the next conflict would be a catastrophe beyond reckoning. Since Kargil, both states have continued to build nuclear weapons, to develop and test ballistic missiles with ranges up to several thousand kilometres, and to accelerate their build-up of conventional arms.

The tests, war, crises and the on-going arms race are only the latest expressions of a more than 60-year-long conflict between Pakistan and India, which has plagued efforts to build democratic and just societies in these countries and has hampered the progress of Southasia as a whole. A settlement of the Kashmir dispute would help ease tensions, but would not necessarily be enough for India and Pakistan either to give up their nuclear-weapons status or to end their mutual hostility. The experience of the Cold War and the nearly two decades since its end makes this abundantly clear. The US and Russia still have

thousands of nuclear weapons each, despite the fact that the Soviet Union is no more. The logic of nuclear weapons has had an enduring effect in preventing the establishment of peace in any meaningful sense. This suggests that the Indian and Pakistani nuclear stockpiles ensure that the future of the region will remain in jeopardy until these weapons are eliminated.

Nuclear war between India and Pakistan would be a catastrophe not only for the two countries. Recent studies simulating the effects of such a conflict have suggested that the use of 50 weapons by each side could create enough smoke from burning cities to trigger a decade-long change in climate across much of Southasia - indeed, across large parts of the northern hemisphere. This would lead, in turn, to crop failures and widespread famine. The casualties would be beyond imagination.

Against the backdrop of the nuclear-weapons tests of 1998, peace groups sprang up spontaneously in towns and cities across India and Pakistan. Building on years of work by a handful of anti-nuclear activists in both countries, these groups articulated deep public concern about the grave dangers posed by nuclear weapons, sought ways to educate and mobilise local communities, and reached out

to make common cause with other civil-society groups working on issues of sustainable development and social justice. The need for a Southasia-wide effort on public education and mobilisation for nuclear disarmament in India and Pakistan was recognised by activists in both countries. They hoped that a South Asian Nuclear-Weapons-Free Zone (SAN-WFZ) treaty, modelled on such agreements in Latin America, the South Pacific and Southeast Asia (with Africa and Central Asia on the block), could offer a way to build regional consensus against nuclear weapons. Such a treaty would forbid each signatory state from possessing or seeking to acquire nuclear weapons.

At its heart, this activism reflects a politics based on imagining and bringing about, from the ground up, a Southasian community of countries sharing a particular set of values. It envisages the countries of the region as not only committed to peaceful co-existence, but also as rejecting the possession and threat of use of nuclear weapons. The political path is one where the civil society in the non-nuclear weapons states in Southasia (ie, Sri Lanka, Bangladesh, Nepal, Afghanistan, the Maldives and Bhutan) campaign for respective governments and others

in the region to negotiate a SANWFZ treaty. This combination of popular and official pressure would strengthen nuclear-disarmament movements in India and Pakistan.

Peace zone

It was back in January and February 2001 that Admiral (retired) Laxminarayan Ramdas and Sandeep Pandey from India, and A H Nayyar from Pakistan, as well as this writer, were asked by groups in Sri Lanka, Bangladesh and Nepal to travel to each country, to begin a regional civil-society dialogue on a Southasian Nuclear-Weapons-Free Zone. This effort was by some measures very successful. It showed the feasibility and utility of systematic interactions between peace activists from India and Pakistan with a large number of civil-society organisations, activists, scholars and government officials in the other Southasian countries. The interest generated by the visits, evident from the large meetings and extensive media coverage that ensued, indicated a widespread concern in the region about the implications and challenges created by the nuclearisation of India and Pakistan.

In some places, people did seem to find the nuclear dangers facing the region somewhat remote. The clearest expression of this was in Sri Lanka, where many seemed to be hearing about the devastating effects of nuclear weapons for the first time. This could be due simply to geography; Sri Lanka is, after all, far removed from any plausible conflict between

Pakistan and India. But there can also be no doubt that there are more pressing concerns for Sri Lankan civil society and policymakers, with the long civil war there showing few signs of ending. Nonetheless, even in Colombo, there was enthusiasm for a Southasia-wide civil-society initiative for peace and disarmament, recognition that nuclear weapons posed a risk to the whole region and support for a SANWFZ treaty.

While there were no discussions with government officials in Sri Lanka, we learnt that Sri Lanka had sought to encourage talks between India and Pakistan on the matter of nuclear weapons. This is a positive sign, and suggests that a more formal dialogue with government officials on the possibilities of the treaty could be worth pursuing. There was strong support from the Bangladeshi civil society for the idea of a SANWFZ treaty, and the need for the smaller, non-nuclear countries in the region to lead the way. The contacts with government officials suggested that Bangladesh could be encouraged to consider working towards such a treaty. This willingness reflects the historical role that Bangladesh played in launching the idea of SAARC as a regional organisation during the late 1970s, and in hosting the organisation's first summit in 1985. Meanwhile, in Kathmandu, there was concern about the impact of a possible nuclear war on the

northern parts of the Subcontinent, which would rope in Nepal. The possibility of being affected by radioactive fallout was taken very seriously. An important issue raised most directly in Nepal, but also elsewhere, was that of overcoming the constraints imposed by the larger and more powerful neighbours on political initiatives by smaller Southasian countries.

While immediate domestic problems took priority in each country, there was a widespread sense of urgency regarding possible nuclear-armed confrontation between India and Pakistan. There was likewise significant understanding that, without peace between Pakistan and India, the Southasian region would remain unstable, and fail to develop the structures of economic and political cooperation it needs to meet the people's needs. From nuclear weapons to energy, food security and climate change, there is a growing array of problems that need to be seen as regional in scope, and which require collective regional solutions. These problems and their solutions will necessitate and generate the practice of a Southasian politics - and with it, a Southasian identity.

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IV. Indo-US Nuclear Deal

A. CNDP Condemns Intransigence of Indian Prime Minister on the Deplorable Indo-US Nuclear Deal

June 23 2008

The Coalition for Nuclear Disarmament and Peace (CNDP) - a national coalition of organisations and individuals for nuclear disarmament - notes with great concern the Indian Prime Minister's obstinate insistence on going ahead with clinching of the India-specific agreement with the IAEA. This will be a vital intermediate step towards operationalising the Indo-US nuclear deal in the teeth of strong opposition within India. The Prime Minister wants to go ahead, trampling upon democratic norms and values, regardless of all rational considerations, let alone ethical ones.

The CNDP reiterates its consistent and firm opposition to the deal on the following grounds as pointed out

repeatedly in the past. *The deal severely undermines the prospects of global nuclear disarmament by (selectively and arbitrarily) "legitimising" India's nuclear status and, in the process, the possession of nuclear weapons by the existing nuclear weapon states - both "recognised" and "unrecognised" - and also the aspirations of other actual and potential aspirants. The deal will promote the cause of nuclear militarism and nuclear-weapon build-up in India against the interests of peace and the people in the region. It will further intensify the arms race between India and Pakistan - both nuclear and conventional. Pakistan, in fact, made a strong plea for a similar deal. And the brusque refusal by the US, instead of dissuading it, would only further inflame its passions and thereby turn the nuclear mess in South Asia all the more dangerous. This deal is also an utterly reprehensible move to*

bring India closer into the US orbit as a regional ally to facilitate the execution of its global imperial ambitions. Furthermore, the consequent shift in focus in favour of highly expensive nuclear power, if the deal comes into operation, will significantly distort India's energy options at the cost of efforts to develop environmentally benign and renewable sources of energy.

The CNDP, on this occasion, calls upon the Indian people to rise in protest against the intransigence of the Prime Minister and voice their strongest opposition to the undemocratic move to impose the deplorable deal on the country.

*Achin Vanaik Admiral L
Ramdas J Sriraman ND
Jayaparakash Amarjeet Kaur
Sukla Sen*



B. Furious lobbying to clear the last lap

Praful Bidwai **

As the Bush administration pushes the outer limits of the political timeline for the passage of the controversial nuclear cooperation deal with India in the United States Congress, two potential stumbling blocks have become apparent in the process of securing exemptions for the agreement from the tough export rules of the Nuclear

Suppliers Group.

One of the stumbling blocks pertains to the United States' insistence on including prescriptive language on non-proliferation concerns in the draft it wants to circulate amongst NSG members, who are due to meet on August 21.

The second potential obstacle lies in the reservations and misgivings that many of

the NSG's 45 member-states have about the deal and its implication for the global nuclear regime.

An important step in the deal's completion was achieved last Friday, when the Board of Governors of the International Atomic Energy Agency approved a special safeguards (inspections) agreement earlier signed by India with its secretari-

at. (India's attempt to get IAEA approval was blocked until a few weeks ago by strong domestic political opposition, which was undercut by the defection of the Samajwadi Party to the ruling coalition's side.)

The two steps remaining in the deal's completion are the NSG's unanimous support for unique exemptions for India from its export rules, and U.S. Congress ratification of a bilateral agreement signed last year with India, enabling nuclear commerce with it, although it has not signed the Nuclear Non-Proliferation Treaty, but has tested nuclear weapons.

Both Washington and New Delhi are furiously lobbying NSG members, key Congressmen and various influential interest-groups, including business associations, to complete the deal before the U.S. Congress adjourns on September 26 prior to fresh elections in November.

However, there is no unanimity amongst experts and observers that the nuclear deal can clear the political deadline for the U.S. Congress even if it wins an NSG exemption.

The draft prepared for the NSG by the U.S., and recently shared with India, has done multiple rounds between the two countries' capitals at different levels. The Indian government says that the text falls "far short of India's expectations" because it contains language which would be tantamount to the NSG asking India to accede to the NPT.

India has repeatedly declared that it cannot and would never sign the NPT, under which it would have to accept comprehensive or "full-

scope" safeguards, allowing the International Atomic Energy Agency to inspect all its nuclear installations.

However, Washington argues that it would be difficult to secure a clean exemption for India from the NSG's nuclear commerce rules unless its member-states' non-proliferation concerns are adequately addressed in keeping with a particular clause of its Guidelines.

India has long insisted on a "clean and unconditional exemption" from NSG rules. But David Mulford, U.S. ambassador to India, told the media yesterday that "unconditional" is a "provocative word" and oversimplifies the many issues and "many moving parts" involved in the process of seeking a "clean exemption".

How the differences might be resolved remains unclear. But it is plain that India has the upper hand in the dispute over the language of the draft.

It is also clear that the Indian government has virtually no room for manoeuvre on the issue because of the commitments it has made to the country's Parliament rejecting any constraints whatever on its military nuclear programme and, beyond the agreed IAEA safeguards, on its civilian nuclear programme.

The second potential stumbling block is likely to prove more troublesome. The India-specific safeguards agreement did clear the IAEA Board of Governors on August 1, but many of the 35 Governors, who are also represented in the NSG, approved it with mixed feelings.

During the debate in the IAEA, more than 30 countries

spoke on the safeguards agreement for over five hours. Of the 19 countries who are also members of the NSG, several including the U.S., Russia, the UK, France, Brazil, Japan, Australia, Germany and Finland, supported the deal and said it is good for non-proliferation.

However, China, the Netherlands, Ireland, Switzerland, Austria, Norway and New Zealand expressed reservations, in particular arguing that a one-off or unique exception should not be made for India in the global non-proliferation order. Some of them said the deal undermines the NPT and will set a negative example to nuclear wannabes.

Japan, which backed the deal in general terms at the G-8 summit last month, entered specific reservations and demanded that India must sign the NPT and the Comprehensive Test Ban Treaty.

Visiting Japanese Foreign Minister Masahiko Koumura also reiterated that demand when he met his Indian counterpart a day before the 63rd anniversary of the atomic bombing of Hiroshima.

Among the non-NSG members of the Board of Governors who spoke, Iran, Egypt and Malaysia objected to "the double standards" involved in the deal in unduly favouring an NPT not-signatory state. They are all members of the Non-Aligned Movement, of which India was a leader and founding member.

Pakistan originally circulated a sharp critique of the safeguards agreement, but withdrew most of its criticism at

the BoG meeting, "evidently under U.S. pressure", says a Western diplomat, who insisted on anonymity.

Instead, in a turnaround, Pakistan welcomed the deal as a "historic precedent", which accommodates "the interests of a non-NPT nuclear weapons state", implying that a similar arrangement be offered to it too to promote "strategic balance" in South Asia.

"It is regrettable that the IAEA allowed itself to be bullied by the U.S. to change its own rules to accommodate America's parochial concerns favouring India," says Achin Vanaik, professor of international relations and global politics at Delhi University. "Earlier, the IAEA rewrote its own rules under American pressure to punish Iran, which had not violated its commitments under the NPT or the IAEA charter."

As the deal moves towards debate in the NSG, member-states which have expressed their reservations about or opposition to it are being keenly watched—and lobbied or

offered allurements or disincentives.

If even one or a few of the 10 NSG members object to special and unconditional exemptions for India, the deal will fall through. The NSG works by consensus, and even a single member can veto a decision or resolution.

Not just the U.S., but even India, is now using coercive diplomacy on some of the NSG member-states. "We have never seen India using a 'with us or against us' approach before," says the Western diplomat quoted earlier. "India's traditional style of diplomacy is based on invoking principles and rational arguments of a non-discriminatory and universal kind."

But now, he adds, "India is leveraging its bilateral relations in a crude fashion, warning countries of unpleasant consequences if they don't support India, an emerging economic giant and a major military power that is also an ally of the U.S."

An avid supporter of the deal from the Indian media has described India's diplomatic

approach as "pretty brutal".

Pushing the nuclear deal has taken a heavy toll of India's image as a state which professes and largely practices non-coercive diplomacy and commands a degree of moral authority because of the progressive positions it used to take in the past.

"That is a sad comment on the role India is playing to promote its narrow military interests and its strategic alliance with the United States, and to preserve and expand its arsenal of mass-destruction weapons," says Vanaik.

"It would be an even greater disgrace", he adds, "if the NSG grants its approval to the deal, subverting its own rules. That would only show that the world's elites have no compunctions in capitulating to crass coercive diplomacy in violation of the principles and policies they advocate—even if that works against the interests of global security and peace."

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C. Nuclear Deal, "National Interests" and Mainstream Indian Opposition

P.K. Sundaram **

It is the Indian Left's concurrence, rather than its disagreement, with the idea of a nuclear future (including nuclear weapons) that has made its case weak and inaudible to the larger masses.

Contextualizing the deal

While the remaining steps

on the Indo-US nuclear deal are now left for the NSG and the US Congress, the domestic debate in India is still alive in political and intellectual circles; though in the media it has been turned more into a commodified entertainment of cash-rich political drama around "national" and "com-

munity" interests. In a charged atmosphere produced by both backers and opponents of the deal pitching their positions in terms of "national interests", it would be necessary not to lose sight of its broader meanings and implications.

In its essence, the deal is

about opening up of the restrictions over nuclear commerce imposed on India in response to its 1974 "Peaceful Nuclear Explosion". Though initiated and facilitated by the United States, this move will provide India access to international markets in nuclear fuel, material and technology, in accordance to the (to be specially laid down) safeguards and guidelines of the IAEA and the Nuclear Suppliers Group (NSG). While it might imply huge imports from the US, the deal also removes international fetters on nuclear trade with other countries including Russia, France (and Canada) whose corporations would get major business orders from India once the deal comes into effect.

This deal comes at a time when our global nuclear future has reached a cross-road - in terms of nuclear energy issues, nuclear trade and nuclear disarmament. The nuclear power industry, after decades of withdrawal and recession in the wake of accidents of like Chernobyl and, prior to that, Three Miles Islands, has been trying in the recent past to come out of the closet once again. Nuclear power lost its charm also due to consistent civil activism on issues related to radioactive risks, associated with all its stages of operation, from uranium mining to power plant safety and security to the problem of nuclear waste. The peace movements worldwide have also stressed the inextricable linkage of nuclear energy technology to nuclear proliferation - a fact glossed

over by the profiteering companies and states aspiring for the Bomb. Corporate interests in the nuclear industry have been pushing internationally to create a "nuclear renaissance" in the recent past, including through huge donations to both the Republican and Democratic candidates for the forthcoming US elections. India's shifting of its energy policy focus towards nuclear power would encourage further the other small Asian and African countries to go for nuclear power which are under increasing influence of the nuclear lobbies and already have plans laid out on their tables.

On the strategic front, the already truncated disarmament and nonproliferation regime is at an equally crucial juncture. Weakened by the continuing denial of the original nuclear weapon states to disarm themselves as promised under Article VI of the NPT, and having the paradoxical duty of keeping proliferation under check while at the same time spreading nuclear technology, the NPT based nonproliferation regime requires substantial overhaul in its 40th year. It is necessary for the world to bring the task of disarming the existing weapon-states back on its agenda while ensuring nonproliferation through more strict verifications. This would also imply discouraging nuclear energy as an option, whose experience in the last half century has already proved its un-sustainability and economic non-viability, besides being an established proliferation route for new states.

However, doing this would entail putting curbs on the US military industrial complex and its hegemonic

ambitions; this would also mean closing shop for the nuclear retailers in the energy sector. To avoid this, the US has chosen some dangerous quick fixes - to increase its military preponderance through missile defence; to devise extra-regime punitive actions or unilateral pre-emption towards hostile countries with advanced "civilian" nuclear capabilities like Iran. On the top of all this, it has decided to award country-specific concessions for access to nuclear infrastructure to a state which only a decade ago conducted nuclear tests in total defiance of the concerns of its own people and international opinion, but is poised to become its ally in shaping the new nuclear and political order of the world. This circumvention of non-proliferation principles is seen by the anti-war, anti-nuclear and peace movements worldwide as a total departure from disarmament goals. *Earlier America used to preach disarmament while amassing its own nuclear stockpile; now it has no problems with even others acquiring nuclear weapons provided they qualify themselves as "good guys". By this new calculation, Indian becomes a "responsible" nuclear power while Iran faces war even as its weapon programme remains unproved.*

At a time when the Indo-US deal is becoming a vehicle for unscrupulously pushing the entire world towards an inherently unsafe, uneconomic, and unsustainable energy future and a far more intensified arms race, evaluating and contesting this deal in terms of the illusive "national inter-

ests" seems patently short-sighted and opportunist.

The "National Interest" and the Nuclear Deal

Ironic it may seem, but in the supposedly flattening world there is an increasing emphasis on shaping foreign and domestic politics in terms of "national interests". In the mainstream discourse on international relations, the reduction of international politics into a state-centric anarchy is accompanied by an equally insular view of exogenous state interests as primordial constant that are pursued as "national interests". This monolithic view of states as primary and unitary actors conveniently overlooks the multiplicity of interacting factors like state, society, class, gender and other identities that constitute, perpetuate and continuously renegotiate the world order - within and across the politico-geographical boundaries. *Thus the "national interest" view of international and domestic policy only tends to naturalize the existing state and in effect the power relations within. From the radical feminists to the marxists, and relatively emancipatory trends like constructivism have been challenging the notion of "national interest" as a garb to defend the status quo.*

In India, all the three sides in the current nuclear debate - the Indian government, the opposition Bharatiya Janata Party (BJP), and the Left forces - have been claiming to have "national interests" on their side. The ideas of strategic sovereignty and energy security are common to the arguments of all the three. In actual terms, all the

three sides have been trying to substantiate their claims by using arguments, in piecemeal fashion of course, borrowed from some faction or the other from within the nuclear establishment.

The BJP's opposition is both opportunistic and false. Had it been in power, it would have been on the other side of the debate pushing the deal even more vociferously than the Congress-led UPA. Its major contention is that the deal will put caps on India's testing and strategic programme. This claim is plain false. On the contrary, by allowing India to channel all its uranium reserves for strategic program while fuelling "civilian" reactors with imported uranium, the deal provides a boost to Indian military nuclear capabilities by freeing indigenously produced uranium exclusively for the "strategic" ones. On the question of explosive testing to upgrade nuclear capabilities, the deal has provisions for prolonged consultation before terminating co-operation, in which the US President would look into explanations related to India's geo-strategic requirements for such testing.

The Left has located its opposition to the deal on two major issues: nuclear sovereignty - independence and unhindered development of India's civilian (and military) nuclear programmes, and, the pro-US foreign policy thrust provided by the deal. The first point about India's sovereignty to pursue a "strategic" nuclear programme is cruelly ironic on the part of the Left

which should instead demand denuclearization not only in India but of the whole world. As the Left's worst fears about provisions of the Hyde Act would come true conceivably only in case India goes for further nuclear tests, it is not difficult to see the Left's eagerness to keep India's right to conduct tests intact - totally in line with the Congress or the BJP. Also not understandable is Left's aversion to IAEA safeguards on the "civilian" nuclear facilities. The safeguards are meant to check the diversion of sensitive dual-use technology or material from civilian to military purposes and are definitely not against the perceived "sovereignty" or can be seen as US intervention as it is the IAEA's inspection in Iran that has till now thwarted US' search for alibis to attack that country.

In trying to prove itself more nationalist than the ruling class parties and to wash away the historic bourgeois maligning of communists' internationalist positions, the Left opposition is singing a dangerous tune, a tune which hampers any genuine Left politics in India in the long run. The Left wants us to forget that this is an attempt, on its part, to sell the opposition to the deal without going into the tedious process of making the public aware of the realities of nuclear future - what else would sell better than "national interest" in a post-colonial society?

On the issue of nuclear energy, most of the time the Left camp has chosen to pick up its arguments from within

the nuclear establishment itself. From the very beginning, it has held that development of indigenous nuclear energy capability is sacrosanct; as opposition to the deal, it has only argued that it would impede India's own nuclear plans and that the riders of international cooperation in nuclear power would be costly to our own civilian nuclear programme (consisting of three stages: Uranium-based, Fast Breeder and Thorium-based Reactors). Its argument has been that in the energy deal, India has been co-opted effectively as a Non-Nuclear Weapon State and its reactors would have to go under perpetual IAEA safeguards. Its discontent on the India-IAEA safeguard agreement is based on the observation that it does not provide for fuel supply guarantees or concrete "corrective measures" in case of any disruption. In the first of the now public UPA-Left communications, the Left raised these concerns about "the self-reliance in the nuclear sector".

To the Left's chagrin, these questions would seem misplaced and often also uninformed if one looks at the shared mainstream premise of maintaining and strengthening nuclear energy option. The official logic would go something like this: we are not bound to import material and technology only from US; other countries like Russia, France and Canada would also come closer; the access to uranium import would shorten our first-phase preparations for the three-stage programme that is delayed due to

shortage of uranium; fuel-supply guarantee would come from respective countries from whom we would do imports; the IAEA does not, can not and has not provided fuel supply to any other country as it is only a regulatory body; our voluntarily placed reactors might not go under perpetual safeguards as feared, since we can withdraw them from safeguards once we stop using imported fuel. *The fact is that the deal does indeed provide most of these "positives"*. It is precisely because of this that we have seen most of the supporters of the Left's position, either in media or among the scientific community, deserting the Left in their evaluation of the deal. It is instructive to note that two very supportive columnists in *The Hindu*, like Siddarth Varadraj and N. Ravi, have both eventually gone over to present different assessments of the safeguards agreement and the negotiations.

This has happened because the Left has never come around to an unequivocal opposition to the nuclear energy option. It did refer to these aspects in the debate at later points, but only as secondary issues. Underlying this equivocation is the fact that the Left has itself never managed to resolve this issue with any degree of rigour or honesty, with Buddhadeb Bhattacharjee in West Bengal castigating environmentalists for opposing nuclear power in the state and the CPI(M) staging a defence of "national interests" at the Centre by "opposing" the India-US nuclear deal.

When the Left is not raising arguments borrowed from the nuclear establishment, it has pointed to the strings attached in the nuclear deal that would make India's foreign policy subservient to US interests. On this count, the Left has made arguments that have found support in well-meaning circles. Although the Hyde Act is a domestic US legislation, it does seek to govern US attitude to the deal and stresses India's increasing congruence with US foreign policy. However, as the US is not the sole beneficiary of this deal, other countries like Russia, France and UK have also come out strongly in support of the waiver and will in effect provide Indian ruling class relatively more space to manoeuvre and promote what the Left calls India's "national sovereignty" in foreign affairs.

Also, one should look at this orientation as a package and not only in terms of foreign policy statements. Intensified neoliberal approach to development and investment, to which the Left offers only lip service opposition and often supports in practice, is bound to give a similar tilt to India's foreign policy. Even on the Iran issue, the Left showed less determination to stop the government when it came to vote. It is not difficult to see that on several other US-sponsored policy changes or neo-liberal turns, the Left had been far more restrained in the four years of its support to the ruling UPA. Not only that, the Left-front ruled state governments have been more than willing to implement these

neoliberal policies - be it introducing the SEZ Act in West Bengal two years earlier than the central Act, or the West Bengal CM pushing for nuclear power plant in the ecologically fragile location of Haripur.

Even without the deal, India could hardly be said to stand up against the US imperial dictates. At times, Indian ruling classes do convey the impression of pursuing a diversified foreign policy, like the recent statement against war on Iran or the latest fracas in the WTO; but essentially these posturing are tactical tools to crack better bargains with the US, not to defy it outright. Moreover, on the issue of progressive foreign policy one can rightfully argue that the recent tide of the 'Left' in Latin America and other parts of the world keeps operating under more or less the same neoliberal framework while pursuing high-pitched anti-Americanism to claim for itself a progressive mantle and to mute domestic discontent. Some reputed leftist scholars have pointed to this and argued that it may just be the CPI(M)'s attempt to win over its lost Left face in the wake of Nandigram.

Indian Nuclear Programme and the Left

The Indian Left has since the very beginning supported an independent, indigenous and robust nuclear programme. It has held the advancement of nuclear technology a hallmark of India's progress almost in the same manner as the ruling class voices of Nehru and Bhabha. On the question of independ-

ence of the programme, it has actually posed itself as the real and most reliable defender of India's scientific prowess. (And polemically, better defender than the dependent elite, who impede the progress of the nation on dictates of their own and foreign masters' interests!) *Like the ruling parties, the Left has also considered environmental, health and security risks attached to the nuclear technology as mere cautionary footnotes in the unstoppable turn of development to be met with adequate administrative measures.*

This is true not only of the civilian nuclear programme but also of the strategic nuclear weapons project. It is worthwhile reminding ourselves that the CPI(M) had actually congratulated nuclear scientists for their achievement after 1998 nuclear tests while condemning BJP for its jingoism.

On the foreign policy front, the Indian ruling class successfully lulled the Left into consent by presenting its nuclear ambition, in complete disregard to international anti-nuclear opinion, in the garb of national sovereignty and independence. Recall that the Indian state disregarded the NPT and the CTBT processes decrying their inherently discriminatory nature, only to launch its own weapons programme. While nonproliferation obviously does not by itself lead to disarmament, it is surely a requisite for a safer world - a necessary link to disarmament. In a more general sense, given the enormous difficulties in dismantling nuclear projects and verifying disarmament, it

would always be better if there are fewer states to be chased for disarmament.

India could better ask for total and comprehensive disarmament by simultaneously strengthening the non-proliferation regime. However, it chose otherwise and kept peddling morally high-grounded pronouncements about discrimination and the putative meaninglessness of non-proliferation. Domestic and international scholarship, both pro and anti-nuclear, has pointed out that this posturing helped India "keep its options open" and was part of a well-thought strategy. On this count, the Indian Left has historically found common cause with the ruling elite purportedly to expose the imperialist double-speak on disarmament - an exercise that has been effectively and consciously put to the dreaded Bombs' service. That out of total 192 members of the UN, only Pakistan and Israel, apart from India, never signed the NPT throws an interesting light on the anti-imperialist spin provided to this act of "valiant defiance".

This has continued despite consistent appeals from its own well wishers associated with the anti-imperialist, anti-nuclear cause.

Left and the Nuclear Future

Contrary to the common perception that the left political parties in India are anti-nuclear and offer an alternative vision to the political, economic, cultural and existential crises of the nuclear

age, they accept development of nuclear technology as a benchmark of historically necessary progress. Unhindered technological advancement here is considered a sacrosanct process that would provide all the right answers to every problem and will eventually take care of even the ironies caused in its own unfolding. This is unmistakably coterminous with post-colonial India's violent tryst with "development" that gives nuclear programmes the arrogance to move ahead even without finding solutions to its front and back-end problems starting from uranium mining to radioactive wastes - and of course the weaponization potentials inextricably associated with nuclear energy programmes.

The Left's protest against the Indo-US nuclear deal from the premise of defending India's "nuclear sovereignty" and maintaining its self-reliance in nuclear

energy marks a frightening consensus in the political mainstream. Also on the other sustainability issues like the environment and climate change, parties like the Congress and the BJP find a supporter in the Left crying hoarse over discrimination by the US - which in effect only means protecting India's "sovereign" right to be equally irresponsible. And in the details of the nuclear deal, India is not only saved from this discrimination, it is being called a "responsible" nuclear power that deserves this!

The current juncture could have been used to put up a comprehensive resistance to forces pushing us into both unsustainable and dangerous futures. By offering a wholesome opposition to the backers of nuclear energy, we could debate and resist the entire set of policies that are devised for capital-intensive energy policies instead of decentralized power generation processes - an

option that would be much more sustainable, safe, equitable and democratic. By limiting the discussion merely to the strings pertaining to "national sovereignty" attached to the deal but not looking at how it affects our overall nuclear future and even sets a precedent for judging new nuclear weapon nations on their closeness to US strategic interests rather than encouraging any comprehensive delegitimization of the entire nuclear process, a major opportunity has been lost. But will it be heard and realized within the Left? Or is it that, after it has proved itself a defender of national sovereignty and saviour from imperialism, it is planning to resume its "nation building" through Nandigram and Haripurs?

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D. The Unbearable Costs of Nuclear Power

Latha Jishnu **

"If we don't do it now, history will not forgive us," says one of the more melodramatic advertisements released by the UPA government as it tries to convince the nation about the rationale -and urgency - for signing the nuclear agreement with the US. There is also Anil Kakodkar, chief of the Atomic Energy Commission, saying "the deal is the most promising and viable way of bridging our energy security for the future..."

Issued by the Ministry of Petroleum and Natural Gas, the

campaign promotes simplistic notions about nuclear energy that only add to the prevailing shibboleths on the subject. One of the biggest ironies is the blithe assurance by the government that the agreement would ensure India's energy security and independence by "ending the technological isolation we have suffered since Pokharan".

The claims about the agreement boil down to the following: a) it will reduce India's dependence on oil and gas; b) it will strengthen the country's

energy independence; c) and that nuclear energy produces more energy than any other source and can be 'replenished'.

These claims have gone largely unchallenged although the Planning Commission is categorical that nuclear will not account for more than 5-6 percent of the total energy even if there is a 20-fold increase in the generation capacity by 2032. More worrying is the fact that such assertions are being made when there is growing evidence that globally the nuclear industry

is going through an unprecedented crisis. Soaring costs of raw materials, special components, and of course, of uranium, have put a huge question mark over the viability of nuclear power, specially since the cost of renewable energy, solar in particular, is showing a dramatic drop. Across the world, projects are facing huge cost overruns and inordinate delays as the top names in the reactor business grapple with a host of problems, from a sharp spike in prices for iron, steel and concrete along with limited supplies of reactor parts and a crippling shortage of skilled manpower.

That's why the nuclear power renaissance which has been talked about for the past 4-5 years has yet to materialize. Among the more disquieting indications that the renaissance may not even take place comes from the US itself. To date, not a single reactor has been ordered in the US since 1978 - and few utilities with nuclear plants are announcing new projects despite the huge blandishments that are being offered by the US Energy Policy Act of 2005. The incentives are more than generous: loan guarantees up to 80 percent of the project cost, production tax credits of \$18 per MW for new nuclear capacity up to 2021 (this would amount to several hundred million dollars) and insurance protection up to \$500 million against delays during construction.

Yet, several American utilities have announced that they are rethinking their nuclear projects or putting them in cold storage because the risks have increased considerably. Prices have soared from around \$

1,500/kW to over \$6,000/kW and are still rising. This means that a 1,000-MW reactor which cost around \$ 1.5-2 billion three years ago now has a tag of \$ 6 billion - and is still rising.

In October, Moody's Investor Service estimated 'overnight cost' of a new nuclear plant would be between \$5,000 and \$6,000 per kilowatt-hour, but warned that these numbers were just guesses. "We believe the ultimate costs associated with building new nuclear generation do not exist today and that the current cost estimates represent best estimates, which are subject to change," its report on nuclear generation said.

Overnight cost is the price if a reactor were to be completed immediately -five years is the minimum but plants take as much as a decade in some cases -while the total cost includes interest and other costs incurred during construction. John Rowe, chief executive of Chicago-based Exelon Corp., the largest nuclear operator in the US, admits that the economics of nuclear power are daunting. News reports quote him thus: "Realistic expectations about the 'renaissance' of nuclear power suggest that it will unfold slowly over time."

That's a diplomatic way of putting it. Others have been more forthright. A telling example is that of MidAmerican Energy Holdings, a power utility owned by Warren Buffett's Berkshire Hathaway. It shelved its plan for setting up a nuclear plant, saying it no longer made economic sense.

The story is no better in Europe where two showpiece projects of nuclear technology are battling huge cost and time

overruns apart from quality concerns that halted work for a while. The twin plants at Flamanville in France and Olkiluoto3 in Finland are being set up by the French giant Areva, which claims that its EPR design, a third-generation evolution of the standard pressurised water reactor, will result in the safest and most efficient nuclear plant ever built. But nothing much has gone right for either of these plants. The Olkiluoto 3 reactor is two and a half years behind schedule with costs doubling to just short of (Euro) €5 billion. Both projects suffer from chronic quality problems in construction.

There are other bottlenecks of a serious nature: shortages of contractors with nuclear certification, of skilled workers and key components. Apart from the Russians, industry sources say only two companies, Japan Steel Works and France's Creusot Forge, part of Areva, can make critical reactor parts such as massive pressure vessels. Both have no spare capacity.

What does all this mean for India's "autonomous, independent and sovereign" nuclear power programme which, ironically, would be heavily dependent on the infusion of foreign funds, technology and fuel to get its projects moving again? With generation capacity stuck at 4,129 MWe or just 2.8 percent of the total after 30 years, the DAE, which had promised to set up 20,000 MWe by 1987, is in a bind. Today, the 17 reactors operated by the Nuclear Power Corporation of India (NPCIL), the sole agency mandated to set up and operate nuclear plants, run at less than 50 percent capacity for want of uranium

although the country has enough reserves to fuel 10,000 MWe. But mismanagement of fuel supply operations is only part of the problems that have landed the DAE in a mess.

The indigenous programme of nuclear self-sufficiency has clearly reached a cul de sac with all expansions plans put on hold and ongoing projects delayed by 2-3 years. Unless it can catalyze 'additionality' -the DAE's term for infusion of foreign funds and technology - there appears to be no future for nuclear energy in the country. Even its much whittled down target of 20,000 MWe (from 43,000 MWe) by 2020 seems a remote possibility since a minimum of 8,000 MW is expected to come from foreign sources. And NPCIL's plan to set up 700 MWe projects is not yet on the drawing board.

Says M. V. Ramana, physicist and senior fellow at the Centre for Interdisciplinary Studies in Environment and Development, Bangalore: "Not only are the claims made by the government untenable but the economics are clearly unviable." Ramana, who has worked extensively on the economics of nuclear power in India, warns:

"Electricity from nuclear power stations, even if it is based on domestic reactors, is more expensive than coal-based power stations because of the high capital cost of reactors. NPCIL's overnight construction costs of recently commissioned reactors like Tarapur III and IV and Kaiga III are around \$1200/kW. Compare this with the estimated cost of about \$3750/kW for Olkiluoto-3 or Florida utility Progress Energy's estimate of \$14 billion for two AP-1000 designed by Westinghouse (which translates to over \$6000/kW) and it is easy to see that imported nuclear reactors will produce electricity at costs that would be simply unaffordable."

NPCIL executive director Sudhinder Thakur though maintains that costs are not comparable. "The cost in France and the US and the cost in India are vastly different. The purchasing power parity index is also applicable to nuclear reactors. When you build a reactor here costs come down dramatically."

This is a pet thesis of the nuclear establishment which says the way out is to indigenise as much of the reactor as is pos-

sible. Given the capabilities available here, this would bring down costs of reactors drastically. Areva is a front-runner in the race to build foreign reactors in India after the Russians who are setting up two light water reactors in Kudankulam, Tamil Nadu. But as former chairman of the Atomic Energy Commission M R Srinivasan points out: "The only way a French reactor would be competitive in India is if a large part of the equipment is made in India, on the basis of technology transfer.

How feasible is that since Areva is pitching the new EPR reactor design as a flagship of the nuclear industry and is set on earning between (Euro) €2.5 billion and €5 billion for each reactor? In the shadowy world of nuclear energy where actual costs are opaque, the illusion is always more beguiling than the reality. But that is no reason why Indians should be taken for a ride on energy security.

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E. Left Parties' Statement on India-IAEA Safeguards

July 11, 2008
Press Statement

The Left parties have issued the following statement on the IAEA Safeguards Agreement

Why the Text was Hidden till Submission to the IAEA?

The Left Parties had

opposed the operationalisation of the Indo-US Nuclear Deal after the passage of the Hyde Act. After the 123 agreement was finalised, it was pointed out that the agreement was in conformity with the Hyde Act. The Left Parties had then asked the UPA Government not to take further steps to operationalise the nuclear deal.

In the UPA-Left Committee, the UPA claimed that they should be allowed to proceed with the IAEA Safeguards Agreement, which would incorporate uninterrupted fuel supplies and various corrective measures, which the Government had failed to secure in the 123 agreement. The Left Parties were skeptical about

these issues being resolved in the IAEA. The UPA refused to show the negotiated text for the last four months.

The text of the Safeguards Agreement has now become public. It is clear that the text was hidden from the Left Parties and the Indian people in order to suppress the fact that India is about to bind its entire civilian nuclear energy programme into IAEA safeguards in perpetuity without getting concrete assurances for uninterrupted fuel supply, right to build strategic reserves and right to take corrective steps in case fuel supplies are stopped.

IAEA Safeguards in Perpetuity without Concrete Fuel Supply Assurance

The text of the draft "Agreement Between the Government of India and the International Atomic Energy Agency for the Application of Safeguards to Civilian Nuclear Facilities"; the so-called 'India-specific Safeguards' agreement sent to the IAEA Board of Governors on July 9, 2008, makes it clear that the repeated assurances made by the UPA Government in Parliament and outside, on securing uninterrupted fuel supply assurances and strategic fuel reserves have not been fulfilled. There are no concrete corrective measures in the main enforceable body of the Agreement, only a vague mention of "corrective measures" in the preamble.

Under the Hyde Act, IAEA safeguards are to be imposed on India's civilian nuclear facilities in perpetuity. The UPA government had repeatedly claimed that India would put its civilian reac-

tors under safeguards under the strictly reciprocal condition of assured fuel supply. If fuel supply was disrupted, as happened in Tarapur, India would have the right to take corrective measures, including taking reactors out of IAEA safeguards.

The key question therefore with respect to IAEA safeguards is: how to ensure that once India's civilian reactors go under safeguards in perpetuity, the country would not be blackmailed by the withholding of nuclear fuel supplies, as the United States did in Tarapur following Pokhran-I?

The preamble to the Safeguards Agreement notes that India is offering its civilian nuclear facilities for IAEA safeguards on the "essential basis" of "the conclusion of international cooperation arrangements creating the necessary conditions for India to obtain access to the international fuel market, including reliable, uninterrupted and continuous access to fuel supplies from companies in several nations, as well as support for an Indian effort to develop a strategic reserve of nuclear fuel to guard against any disruption of supply over the lifetime of India's reactors." The real point is that the preamble merely 'notes' India's intentions in these respects. IAEA has neither any obligation regarding fuel supplies or building strategic reserves nor does this noting India's basis for this offer give India any additional rights through this agreement. Therefore to read into this clause either a guarantee for fuel supplies or IAEA's support for building up a strategic reserve is misleading the people.

"Corrective Measures": Vague and Ineffective

The preamble of the IAEA Agreement notes: "India may take corrective measures to ensure uninterrupted operation of its civilian nuclear reactors in the event of disruption of foreign fuel supplies." Neither the "corrective measures" nor the precise relationship between these "corrective measures" and the in-perpetuity imposition is spelt out in any meaningful terms in the text. This means that should India for any reason decide to take the items subject to the Agreement out of IAEA safeguards on the contention that the "essential basis" no longer applies, it will open itself to the serious charge of violating an international agreement. In this connection, it is worth remembering that although India claims the right, under the provisions of the 1963 Indo-US agreement on Tarapur, to reprocess the considerable quantities of Tarapur spent fuel that have accumulated to India's great inconvenience and expense, it has not been able to enforce the claimed right to reprocess, which has long been disputed by the United States.

As against the vagueness of the "corrective measures" figuring in the preamble, what is spelt out clearly in the body of the agreement (Paragraph 32) is that India can withdraw its facilities from safeguards only if it is (a) jointly agreed between India and IAEA, and (b) if these facilities are no longer usable for any nuclear activity. What does this mean? It can only mean that India can withdraw any facility it wants out of IAEA safeguards

only if it strips it of all capability of producing nuclear energy and that too only after the IAEA determines that "the facility is no longer usable for any nuclear activity relevant from the point of view of safeguards."

Even if the Agreement is terminated by mutual consent, the termination of safeguards on the items subject to the Agreement [these are material and facilities as defined in Paragraph 11(a)] would stay in place in accordance with GOV/1621 till all the conditions of GOV/1621 are met. The conditions of GOV/1621 are so stringent that the rights and obligations of the parties continue to apply on all nuclear materials till they have been returned or all fissionable materials supplied or produced goes out of the inventory - that is, until all the facilities and material, nuclear or non-nuclear, supplied to the country under these safeguards are either returned or consumed or no longer usable for any nuclear activity. Therefore, this provision will not allow a single reactor to be taken out of safeguards.

Preambular References Non- Enforceable

It is well established in international law that the preamble is

a part of the treaty or international agreement and it can be used to give colour and tone to the interpretation of the operative part of the treaty/agreement. This does not however mean that it can be used to create additional rights or obligations that are not contained in the clauses of the Treaty/Agreement.

The text of the IAEA Draft Agreement makes clear there are no corrective measures identified in the operative of the clauses of the Agreement. The mention of corrective measures is only in the preamble and here too, no concrete corrective measures have been defined. Unless there are specific provisions in the operative clauses, a phrase such as "corrective measures" inserted in the preamble cannot create either omnibus rights or obligations outside the text of the treaty. A similar example is for instance the TRIPS Agreement in WTO. The preamble states that it recognizes "the underlying public policy objectives of national systems for the protection of intellectual property, including developmental and technological objectives".

However, can any country use the "public policy objectives" to override, for instance, the need for providing product

patents as contained the body of the TRIPS agreement?

The way a facility can be withdrawn from safeguards has been spelt out in the main body of the draft agreement. Therefore, if the UPA government is trying to argue that the preambular statement of "corrective measures" gives India some kind of overriding right over all clauses in the body of the Agreement, it is committing a deliberate fraud on the people.

The final arbiter with regards to any interpretation of the Agreement and dispute settlement is the Board of Governors of IAEA. The Board of Governors decision is final in this regard and if India is held to be non-compliant, even though it is not so by its own interpretation, India can be referred to the Security Council for action including sanctions. The Iran case is an example. Though many countries including India had publicly endorsed Iran's right to the fuel cycle, it was referred to the Security Council for violation of its Safeguards Agreement by the Board of Governors at US's instance.

[Source: <

[http://www.pugwashindia.org/article_detail.](http://www.pugwashindia.org/article_detail.asp?aid=147)

[asp?aid=147](http://www.pugwashindia.org/article_detail.asp?aid=147) >.]



F. Pakistan's Letter to the Members of the IAEA Board and the NSG

Following is the text of the letter from Pakistan to the member-states of the IAEA Board of Governors and the Nuclear Suppliers Group about the Indo-US nuclear deal - the draft text of the proposed Safeguards Agreement

between India and the IAEA, to be more specific.

[The Draft has been approved by the IAEA BoG On August 1 without any voting, though reservations were voiced by some during the discussions.]

PERMANENT MISSION OF PAKISTAN TO THE INTERNATIONAL ORGANISATIONS, VIENNA

No. UN-19/08/India
18 July 2008

Excellency,

As you may be aware the international Atomic Energy Agency (IAEA) has recently circulated the draft text of a proposed Safeguards Agreement between India and the IAEA.

2. The Agreement is to be considered by the IAEA Board of Governors (BOG) and subsequently by the Nuclear Suppliers group (NSG). Evidently efforts are being made to rush through the agreement through the IAEA-BOG and the NSG.

3. In this regards the following points need to be kept in view:-

(i) The Safeguards Agreement was circulated to the BOG on 9 July 2008. Under its rules, it can be considered, at the earliest, 45 days later, i.e., 25 August 2008. Consideration of the Agreement cannot be placed on the Agenda for the BOG meeting on 01 August 2008.

(ii) There are no good technical or substantive reasons for the BOG to waive the 45 days rule. The political exigencies of either India or the US are not sufficient reason for the BOG to waive the 45 days rule which is designed to enable BOG members to carefully examine the content and implications of any Agreement so as to ensure that it serves the purpose of credible verification of non-diversion for which it is being concluded.

(iii) On the contrary, the

unique and exceptional contents of the India-IAEA Agreement necessitates that time should be provided to BOG members to carefully study the Agreement before it is considered for approval.

(iv) The requirement for approval of a Safeguards Agreement by the BOG should not be considered a mere proforma exercise. Although the BOG has not sought to amend or reject previous Agreements, this was due to their broad adherence to the existing models for such Agreements (INFCIRC 66/Rev.2, INFCIRC 153 and voluntary offer agreements concluded with the NPT nuclear weapon States). The India-IAEA Agreement does not confirm to any of these models. The Agreement is a unique hybrid reflecting provisions of various models.

(v) It therefore requires careful consideration, particularly because it is likely to set a precedent for other States which are not members of the NPT and have military nuclear programmes.

(vi) The draft accords recognition to India as a country with "advanced nuclear technology", despite the fact that there is no agreed definition of an "advanced nuclear technology" state.

(vii) A most disturbing feature of the Agreement is the reference and reflection in the Preamble to the India-U.S. Joint Statement of 18

July 2005. The Agreement (in preambular para 9, sub-para 2) specifically notes India's "willingness" to "identify and separate civilian and military nuclear facilities". Thus, the IAEA-BOG is being asked to recognize and accept India's nuclear weapon status.

(viii) This preambular reference is in itself unique, as similar provisions do not exist in other such Agreements. The Preamble prejudices and contradicts the purpose of the Agreement, i.e., to ensure that peaceful nuclear activities do not contribute to the proliferation of nuclear weapons. Thus, if the agreement is to confirm to the "guidance documents" mentioned, this reference to the Indo-US Joint Statement in the preambular part of the Agreement should be deleted.

(ix) Moreover, INFCIRC 66/Rev.2 type agreements have so far been "facility specific". This Agreement on the other hand is described as an "umbrella agreement". Facilities to be safeguarded have not been listed. They will be added to the safeguard Agreement as they are notified by India. This raises valid questions. What is the purpose of the Agreement if the facilities to be safeguarded are not known?

(x) Despite India's refusal to place its Breeder Reactors and its Thorium-based programme under safe-

guards, the draft recognizes India's three-stage nuclear programme. This is gratuitous legitimization of potential nuclear proliferation and contrary to the IAEA's objectives.

- (xi) Such concerns are compounded further by other provisions of the Agreement, especially (a) the ambiguous provisions regarding conditions for the termination of the Safeguards Agreement; (b) access for India to the International fuel markets; and (c) unspecified "corrective measures" which India would be allowed to take to "ensure uninterrupted operation of its civilian nuclear reactors...", contravening the continuation of IAEA safeguards in perpetuity.
- (xii) As a consequence, India would be able to acquire nuclear fuel for the declared civilian facilities, build up a "strategic reserve" for the life-time of the reactors, and then terminate safeguards and divert part of the fuel for weapons purposes.
- (xiii) The Agreement may indeed provide an incentive to India to conduct further nuclear weapons testing, since future termination of the Safeguards Agreement, after India has built up an adequate fuel reserve, would resolve India's problems relating to the shortage of nuclear material for both its civilian and its nuclear weapons programme. However, the agreement does not even provide

that further nuclear explosive testing would result in the termination of peaceful nuclear cooperation and the Safeguard Agreement.

- (xiv) The reference to a "restricted document". GOV/1621 of August 1972, as the yardstick for termination is unsatisfactory. The BOG cannot approve an agreement with secret clauses. It is vital to expressly incorporate the conditions for the termination of the safeguard Agreement.
- (xv) There are some other provisions of the Agreement which raise concern. For example, paragraph 28 provides for the suspension of safeguards on "any parts of the facilities.....which are removed from maintenance or repair" This could open door for nuclear fuel and advanced technology provided to India to be diverted for weapons purposes.
- (xvi) The draft does not indicate if India is willing to sign an IAEA Additional Protocol in respect of its civilian nuclear facilities.
- (xvii) The legal and technical aspects flowing from the draft require in-depth examination and the IAEA board of Governors (BoG) and NSG are required to carefully weigh the consequences that may ensue from succumbing to "expediency" over "principles".
- (xviii) The IAEA statute does not provide for differenti-

ation between member states on the basis of political consideration nor does it allow for special treatment for a particular state. Calling it an India-specific agreement is therefore unprecedented. Since the IAEA concludes safeguards agreements based on approved models, it will be important that any safeguards agreement adopted by the BoG in respect of India should be available as a model for other non-NPT states.

- (xix) It is quite clear that the proposed agreement has no utility in advancing the cause of non-proliferation. On the contrary, it will enable and encourage further proliferation. And, apart from the consequences for the non-proliferation regime, the agreement threatens to increase the chances of nuclear arms race in the sub-continent.
4. As is clear from the foregoing, the proposed IAEA-India agreement and the unjustified call for an exemption to India alone from the NSG rules is discriminatory and dangerous. It is important to resist the drive to steamroll this agreement through this IAEA-BoG and the NSG. The short and long term consequences of the agreement necessitate that text be studied and any decision thereon taken after full deliberation. The overarching consideration in this respect should be to uphold the principles of non-discrimination and

equity as well as regional and global peace and stability.

5. Pakistan expresses the hope that, on the basis of a close study of the document, other members of the BoG will join it in seeking appropriate

amendments to the Agreement when it is considered in the BoG.

6. Please accept, Excellency, the assurances of my highest consideration.

Ambassador/Permanent Representative

Ambassadors/Permanent Representatives of Member States of the IAEA Board of Governors and Member States of the Nuclear Suppliers Group, Vienna.

[Source:
[http://www.pugwashindia.org/article_detail.asp?aid=149.](http://www.pugwashindia.org/article_detail.asp?aid=149)]



G. Text of the Statement Delivered by Austrian Representative on August 1 at the IAEA BoG Meet at Vienna on the India-IAEA Draft Safeguards Agreement

IAEA-BoG, August 1, 2008 Agenda Item 1: Safeguards Agreement with India Statement delivered by Austria

Mr. Chairman,

The following statement is also made in the name of the observer states Costa Rica, the Netherlands and Norway.

1. The strengthening of the international non-proliferation architecture is a priority of our foreign and security policies. We are firmly committed to the NPT and to the IAEA as the Treaty's indispensable verification authority. An effective, universally applied IAEA comprehensive safeguards system remains the cornerstone of the world's nuclear non-proliferation regime. Hence the universalization of this verification system is of utmost importance.
2. Against this background, as a matter of principle, we welcome all safeguard agreements that enable monitoring and inspection

of nuclear facilities that had previously not been under the control of the Agency.

3. In general, the conclusion of an IAEA safeguards agreement with India for a significant part of India's civilian nuclear sector must therefore be welcomed. Placing these facilities under IAEA control demonstrates that the IAEA's safeguards have become a standard also for States not party to the NPT. We underline our hope that India will put the totality of its civil nuclear facilities under these safeguards.
4. With regard to the draft agreement at hand, there are a number of questions. Clearly, the proposed agreement is not a standard text. We have received the text just a few weeks ago and studied it thoroughly. We would like to thank the Secretariat for clarifying some of the questions raised by member states at the briefing on July 25. However, a

number of concerns remain:

5. The ninth tirit of the Preamble notes that "India may take corrective measures to ensure uninterrupted operation of its civilian nuclear reactors in the event of disruption of foreign fuel supplies". The term "corrective measures" is not defined in the draft agreement, leaving the text open for interpretation. We would like to thank the Secretariat for its interpretation that these "corrective measures" could not include the termination of safeguards. Still, it remains of concern that the agreement does not specify what amounts to a "disruption" of supply and what kind of "corrective measures" could be taken by India. We have not received a clear answer to the question what kind of measures could be taken in which specific case.
6. Article 4 states that "The application of safeguards under this Agreement is

- intended to facilitate implementation of relevant bilateral or multilateral agreements to which India is a party, which are essential to the accomplishment of this Agreement". It is uncommon that safeguards agreements testify to intent other than the obvious interest in having the IAEA monitor [i.e.] the correct use of the civilian nuclear material. The question arises whether this clause intends to create a direct link with other agreements. It is the firm view of our delegations that safeguards must be concluded for perpetuity. There can be no linkage with other agreements and no provisions should enable any party to invoke this Article to terminate the Safeguards Agreement.
7. . Article 13 states that "Upon entry into force of this Agreement, and a determination by India that all conditions conducive to the accomplishment of the objective of this Agreement are in place, India shall file with the Agency a Declaration, based on its sovereign decision to place voluntarily its civilian nuclear facilities under Agency safeguards in a phased manner". This paragraph has two significant implications:
- First, all Members of the Board of Governors are expected to endorse the safeguard agreement now. India, however, will at an undefined later stage decide autonomously whether it actually becomes applicable.
 - Secondly, we are dealing with an "empty shell" agreement since the entities to be put under IAEA control will be defined by India only at a later stage in a phased manner. Our governments have positively taken note of India's political commitment expressed in INF-CIRC/731 that "facilities identified as civilian in the Separation Plan will be offered for safeguards". We regret, however, that these relevant facilities are not listed in the annex to the present agreement in a legally binding way.
8. All these elements of the safeguard Agreement from our point of view diminish the concept of comprehensive verification that is at the heart of the NPT-system. Clearly, there remain issues of concern from a non-proliferation perspective.
9. Our governments, however, ultimately put trust in the judgement of DG EL Baradei who has personally endorsed the present Safeguards Agreement as a basis for cooperation with India. It is also clear that any questions in the context of the operation of the agreement could be discussed at any time in the BoG.
10. We continue to call on India to join the NPT as Non-Nuclear Weapon State without preconditions and express our conviction that the NPT's further universalization is essential in reaching our final goal of a world free of nuclear weapons.
11. Finally, we underline that the decision taken today by the BoG only concerns the question of endorsement of a safeguards agreement between the IAEA and India. This decision does in no way prejudice the decision on a possible India-specific exemption in the Nuclear Suppliers Group which will be discussed in the appropriate fora.
12. Mr. Chairman I now have concluded the part of our statement also made in the name of the observer states Costa Rica, the Netherlands and Norway. Finally and on an entirely national note, Let me request the secretariat to put on the record the following clarification we deem necessary in consideration of Austrian national legislation: It is our understanding that the qualification of nuclear energy as "efficient, clean and sustainable energy source..." made in the Preamble of the Safeguards Agreement reflects the point of view of India and has no bearing on the assessment by the BoG. Austria nationally opposes such a qualification.
- Mr Chairman, this concludes my statement. Thank you.



H. Decision Time on the Indian Nuclear Deal Help Avert a Nonproliferation Disaster

[The following is the text of a letter initiated by a working group affiliated with the Abolition 2000 and endorsed by leading peace activists and prominent personalities all over the world, including India and USA, addressed to the members of the Nuclear Suppliers Group (NSG).]

August 15, 2008

Dear Foreign Minister:

Your government and other members of the Nuclear Suppliers Group (NSG) are being asked to consider the Bush administration's proposal to exempt India from longstanding NSG guidelines that require comprehensive IAEA safeguards as a condition of supply.

As many of us wrote in a January 2008 letter ("Fix the Proposal for Nuclear Cooperation with India" <http://legacy.armscontrol.org/pressroom/2008/NSGappeal.asp>), India's commitments under the current terms of the proposed arrangement do not justify making far-reaching exceptions to international nonproliferation rules and norms.

Contrary to the claims of its advocates, the deal fails to bring India further into conformity with the nonproliferation behavior expected of the member states of the nuclear Non-Proliferation Treaty (NPT). Unlike 178 other countries, India has not signed the Comprehensive Test Ban Treaty (CTBT). It continues to produce fissile material and expand its nuclear arsenal. As one of only three states never to have signed the NPT, it has not

made a legally-binding commitment to achieve nuclear disarmament, and it refuses to allow comprehensive, full-scope International Atomic Energy Agency (IAEA) safeguards.

Yet the arrangement would give India rights and privileges of civil nuclear trade that have been reserved only for members in good standing under the NPT. It creates a dangerous distinction between "good" proliferators and "bad" proliferators and sends out misleading signals to the international community with regard to NPT norms.

We urge you to support measures that would avert further damage to the already beleaguered global nonproliferation and disarmament regime.

Given that the NSG only takes decisions by consensus, your government has a responsibility to consider the following adverse implications of the proposal.

I. Undermining the Nuclear Safeguards Regime

The proposed exemption of India from the comprehensive nuclear safeguards standard of supply threatens to further undermine the nuclear safeguards system. Given that India maintains a

nuclear weapons program outside of safeguards, facility-specific safeguards on a few additional "civilian" reactors provide no serious nonproliferation benefits.

As part of the carefully crafted final document of the 1995 NPT Review and Extension Conference, all NPT states-parties endorsed the principle of full-scope safeguards as a condition of supply. A decision by the NSG to exempt India from this requirement would also contradict this important element of the NPT bargain. Furthermore, it is inappropriate for the member states of the NSG to take it upon themselves to make a decision on this matter for the 140-plus other members of the NPT.

Making matters worse, Indian officials have suggested that it might cease IAEA scrutiny if fuel supplies are cut off, even if that is because it renews nuclear testing. NSG members should reject such an interpretation. Your government has a solemn responsibility to reject any India-specific exemption from NSG guidelines that is premised on a safeguards agreement that is in any way inconsistent with the principle of permanent safeguards over all nuclear materials and facilities.

India also pledged on July 18, 2005 to conclude an additional protocol to its safeguards agreement. States should insist that India conclude a meaningful Additional Protocol safeguards regime before considering whether it is appropriate whether and how to make any India-specific alteration to the NSG guidelines.

2. Possible Transfer of Sensitive Enrichment and Reprocessing Items

Unless rejected by the NSG, India's insistence on obtaining "full" nuclear cooperation would undermine efforts to prevent the proliferation of technologies that may be used to produce nuclear bomb material, including reprocessing and enrichment technologies and items. Allowing transfers of these sensitive nuclear technologies is extremely unwise given that IAEA safeguards cannot prevent such items from being replicated and used to advance India's weapons program.

Recall that India detonated a nuclear device in 1974 that used plutonium harvested from a heavy water reactor supplied by Canada and the United States in violation of earlier bilateral peaceful nuclear use agreements. U.S. officials have stated that they do not intend to sell such technology, but other states may. Virtually all NSG states support proposals that would bar transfers of these sensitive nuclear technologies to non-NPT members. India must be no exception.

3. Indirect Assistance to India's Nuclear Weapons Program

In the absence of a suspension of fissile material for weapons by India, foreign nuclear fuel supplies would free up India's relatively limited domestic supplies to be used exclusively in its military nuclear sector, thereby indirectly contributing to the potential expansion of India's nuclear arsenal. This would contradict the spirit if not the letter of Article I of the NPT (which prohibits direct or indirect assistance to another state's nuclear weapons program), and it would spur further arms racing in South Asia.

India's verbal commitment to support negotiations of a global verifiable fissile material cut off treaty is a hollow gesture given the fact that states have failed to initiate negotiations on such a treaty for over a decade.

4. Facilitating Indian Nuclear Testing

If, as Prime Minister Manmohan Singh said on July 18, 2005, India would "assume the same responsibilities and practices" as other countries with advanced nuclear capabilities, it is reasonable to expect that India should agree to a legally-binding moratorium on nuclear test explosions. It would be highly irresponsible for CTBT signatories not to establish CTBT signature as a basic condition for NSG nuclear trade with India or any state that has not yet signed that treaty.

While Singh has reiterated his commitment to maintaining India's voluntary nuclear test moratorium, India has sought to avoid any further commitment to a test ban and has sought to avoid the possibility of any penalty in the event that it does resume testing. As Singh asserted most recently in his July 22 statement to the Lok Sabha, "I confirm that there is nothing in these agreements which prevents us from further nuclear tests if warranted by our national security concerns."

To reduce the impact of fuel supply cut off if India were to resume nuclear testing, Indian officials have gone further and are demanding a so-called "clean" and "unconditional" exemption from NSG guidelines and are seeking bilateral nuclear cooperation agreements that help provide India with strategic fuel reserves and/or lifetime fuel guarantees.

This flatly contradicts a provision in the 2006 U.S. implementing legislation, which was championed by Sen. Barack Obama and approved by the U.S. Congress, that stipulates that fuel supplies be limited to reasonable reactor operating requirements. It would also contradict the policy mandated by the U.S. implementing legislation that a nuclear test would lead to the immediate cessation of all U.S. nuclear cooperation with India.

If nuclear testing is to be deterred, meaningful penalties must be available. If NSG states do agree to supply fuel for India's "civilian" nuclear

sector, they must avoid arrangements that would enable or encourage future nuclear testing by India. Otherwise, you and your government may become complicit in the facilitation of a new round of destabilizing nuclear tests.

In light of the above-mentioned flaws in the ill-conceived proposal to exempt India from certain NSG guidelines, we recommend that:

- *If NSG supplier states should agree to supply fuel to India, they should establish a policy that if India resumes nuclear testing, or if India violates or withdraws "civilian" facilities or materials from international safeguards, all nuclear cooperation with India involving NSG members shall be terminated and unused fuel supplies from NSG states shall be returned. If NSG supplier states should agree to supply fuel to India, they should do so in a manner that is commensurate with ordinary reactor operating requirements and not provide - individually or collectively - strategic or lifetime nuclear fuel reserves.*
- *NSG states should expressly prohibit any transfer of sensitive plutonium reprocessing, uranium enrichment, or heavy water production items to India, whether inside or outside bilateral nuclear cooperation agreements.*
- *NSG states should actively oppose any arrangement that would give India any special safeguards exemptions or*

would in any way be inconsistent with the principle of permanent safeguards over all nuclear materials and facilities.

- *Before India is granted a waiver from the NSG's full-scope safeguards standard, it should join the other original nuclear weapon states by declaring it has stopped fissile material production for weapons purposes and transform its nuclear test moratorium into a meaningful, legally-binding commitment.*
- *NSG states should agree not to grant India consent to reprocess nuclear fuel supplied by an NSG member state in a facility that is not under permanent and unconditional IAEA safeguards, and also agree that any material produced in other facilities may not be transferred to any unsafeguarded facility.*
- *NSG states should agree that all bilateral nuclear cooperation agreements between an NSG member state and India explicitly prohibit the replication of any dual-use technology or use of such technology in any unsafeguarded Indian facilities.*

The Indian nuclear deal would be a nonproliferation disaster and a serious setback to the prospects of global nuclear disarmament, especially now. For those world leaders who are serious about ending the arms race, holding all states to their international commitments, and strengthening the nuclear Nonproliferation Treaty, it

is time to stand up and be counted.

Sincerely,

Daryl G. Kimball,
Executive Director,
Arms Control Association,
Washington, D.C.

Hideyuki Ban
Co-Director
Citizens' Nuclear Information
Center (Tokyo, Japan)

Notes:

1. See September 16, 2006 exchange on the floor of the Senate between Sen. Barack Obama and Sen. Richard Lugar, then Chairman of the Senate Foreign Relations Committee, available from http://bulk.resource.org/gpo.gov/record/2006/2006_S11021.pdf and http://bulk.resource.org/gpo.gov/record/2006/2006_S11022.pdf. Also see Sec. 103 (b) para 10 of the Henry J. Hyde United States-India Peaceful Atomic Energy Cooperation Act.

2. All UN members states are also obligated to support UN Security Council Resolution 1172, which calls on India and Pakistan to sign the Comprehensive Test Ban Treaty (CTBT) stop producing fissile material for weapons, and undertake other nuclear risk reduction measures. All NSG states have a responsibility to uphold their obligations under UNSC 1172 by reiterating and actively encouraging India and Pakistan to implement these and other nuclear restraint measures.



V. Book Review

Nuclear Power Is Not the Answer

M. Channa Basavaiah**

Nuclear Power Is Not the Answer, Helen Caldicott, The New Press, New York and London, 2006, pp: 221.

Dr. Helen Caldicott is a trained physician, and for the last four decades involved in antinuclear activism. She is thoroughly versed in the science of nuclear energy. She is the founder of Physicians for Social Responsibility (PSR) and Women's Action for Nuclear Disarmament (WAND) a nominee for the Nobel Peace Prize, and the 2003 winner of the Lannan Cultural Freedom Prize. She divides her time between Australia and Washington, D.C., where she recently established the Nuclear Policy Research Institute (NPRI). The NPRI's mission is to facilitate a far-reaching, effective, ongoing public education campaign in the mainstream media about the often-underestimated dangers of nuclear weapons and power programs and policies. She has written for numerous publications and has authored seven books. *Nuclear Madness; Missile Envy; If You Love This Plant: A Plant to Heal the Earth; A Desperate Passion: An Autobiography; The New Nuclear Danger: George Bush's Military Industrial Complex and Nuclear Power is Not the Answer*. Dr. Caldicott's most recent book is *War In Heaven* (March 2007).

Dr. Helen Caldicott in her first book *Nuclear Madness* wrote that, "As a physician, I

contend that nuclear technology threatens life on our planet with extinction.

If present trends continue, the air we breathe, the food we eat, and the water we drink will soon be contaminated with enough radioactive pollutants to pose a potential health hazards far greater than any plague humanity has ever experienced." The present book under review, **"Nuclear Power is Not the Answer"**, thoroughly debunks the claim of **"nuclear power renaissance"** and presents exhaustive evidence to refute the now-resurgent claim that nuclear power is the solution to global warming.

In this book, Dr. Caldicott presents her convincing case in carefully documented 10 chapters, each one covering a separate crucial issue about nuclear power. She covers all the components - from the carbon emitted in the creation of nuclear power to the cost of nuclear plants and the health risks and possibility of accidents and terrorists' access. She also points out that, despite proponents' assurances, we still haven't developed mechanisms to store the waste materials for the necessary thousands of years, and that state-of-the-art nuclear plant technology is still full of unresolved problems. In order to overcome these potential long lasting problems Dr. Caldicott provides sensible alternatives to switch to wind and other benign renewable energy sources.

The following is an account

of her chapter-wise arguments.

In the **first chapter** titled **"The Energetic Costs of Nuclear Power"** contends the US Government propaganda (this is true even with respect to India) to sell nuclear energy in terms clean and emission free green and green house gases if fraudulent. Although nuclear power plants do not release carbon dioxide (CO₂), the primary greenhouse gas, into the atmosphere causing global warming, nuclear industry in its various stages (nuclear fuel cycle) requires a vast infrastructure, which uses huge fossil fuels.

First stage involves uranium mining and milling. The energy used to mine the uranium is fossil fuel. At this stage energy requirement depends on the grade of uranium ore. The lower the grade or ore the greater the usage of energy for extraction. The global high-grade uranium ores are finite. These reserves are estimated at only 3.5 million tons.

Hence, dependence on low-grade uranium mining becomes inevitable and thus more energetic costs are involved in this stage. The mining and milling process involves usage of bulldozers, shovels, trucks and milling machines all are run by fossil fuels. The author says "fuel is also needed during this process to create steam and heated gases, and all the chemicals used in the mills must be manufactured at other chemical plants". Further, after extraction of yellow cake massive quanti-

ties mill tailings have to be subjected to remediation, which is generally not undertaken, million of tons of radioactive material is dumped on the ground, often on native tribal lands, emitting radioactive elements to the air and water. If this single remediation process is scrupulously followed the energetic price of nuclear electricity becomes unreasonable.

The second stage is the conversion of uranium-to-uranium hexafluoride. The specific energetic costs involved in this process amount 1.478 gigajoules per kilogram of uranium. The third stage of uranium enrichment is also very energy consuming process.

The specific energy expenditures at this stage include construction, operation, and maintenance of the enrichment plant. The specific energetic costs of enrichment are measured in joules per separative work unit (SWU). According to the author, "averaging the current world use of the two different processes - 30% gaseous diffusion and 70% ultracentrifuge - the energetic costs are 0.0055 petajoules per 1,000 SWU." (A petajoule is 1 million billion joules). The fourth stage is fuel element fabrication i.e. the enriched uranium hexafluoride gas is made solid fuel pellets of uranium dioxide, which are used nuclear reactors. Again fossil fuel is used in the fabrication process, and the author points out that, "the specific energy expenditure is 0.00379 petajoules per ton of uranium." The fifth stage is construction of reactors. These require an immense aggregate of goods and services. The mean value of energetic costs at this stage for one reactor according

to the author is 80 petajoules.

The process of energetic costs involved in the nuclear electricity generation does not stop here strictly speaking there are five more stages in nuclear cycle. These are decommissioning and dismantling of reactors, cleanup of reactors, cooling up of tritium and carbon 14 water, disposal of radioactive waste and transport of high level and intermediate waste and long-term storage for 240,000 years. All these stages involve huge energetic costs. The author makes it very clear that, "looking at the energetic costs of the nuclear fuel cycle just from mining the ore through reactor construction to dismantling of the reactor, *without* even assessing the energy costs of storage and transportation of radioactive waste, the total energy debt comes to approximately 240 petajoules (24 million billion joules)." As against this, according to the author "the construction of and implementation process involved in a gas-fired plant require only one-tenth that amount - 24 petajoules - to produce the same amount of electricity.

The *second chapter* titled "**Paying for Nuclear Energy**" brings out the true economic costs of nuclear energy production. Not withstanding propaganda, nuclear power generation world over is expensive. The industry falsely claims nuclear power costs only 1.7 cents per kilowatt-hour production compared to 2 cents for coal and 5.7 cents for natural gas. This calculation omits capital costs from a pricing equation. The author quotes from a report, "Mirage and Oasis: Energy Choices in an Age of

Global Warming" (published by the New Economics Foundation, London, 2005) and says that the true costs of nuclear power generation to be three times the industry figure if all costs, including capital ones, in the nuclear cycle are included. Dr. Caldicott terms nuclear energy as "socialized electricity". The developed countries despite their firm belief in "free market" are not willing to apply its tenets to nuclear energy. All the governments provide huge subsidies and handouts to nuclear industry. This socialization of nuclear electricity within capitalist society has never been called into question, or have the general public and their elected representatives critically scrutinized it.

Nuclear power depends upon government subsidies at every level. The US government spent a gargantuan \$111.5 billion on energy research and development between 1948-1998, allocating 60% or \$70 billion of this to nuclear industry alone. Over the same period, \$26 billion was allocated to oil, coal, and natural gas; \$12 billion went to renewable energy sources such as wind, hydro, geothermal, and solar power; and only \$8 billion went to energy efficiency technologies. The OECD countries governments spent \$318 billion by the year 1992 specifically on nuclear energy. Now new and increased subsidies are being given to nuclear energy production. The 2005 US energy bill provides cradle-to-grave subsidies for nuclear power. The industry will gain \$13 billion in subsidies and tax breaks, including: \$5.7 billion in production tax credits; \$4.4 billion in various subsidies-a conservative estimate that

includes research and development, tax breaks, loan guarantees, and risk insurance; \$1.25 billion from 2006 to 2021 and "such sums as necessary" from 10116 to 2021 for a nuclear power plant in Ohio to generate hydrogen for automobiles; \$435 million over three years for nuclear energy research development, including the Department of Energy's Nuclear Power 2010 programme to build new nuclear power plants and Generation IV programme to develop new reactor designs. Since the no insurance company comes forward to insure nuclear industry and its personnel, the bill reauthorizes the Price-Anderson Act, with its guarantee that taxpayers, not the industry, will pay 98% of up to \$600 billion governmental insurance in the event of a worst case nuclear meltdown. The industry could not function if it had to cover its own insurance.

Besides the above "direct" or "on-budget" subsidies the nuclear power sector in the US is granted a number of "off-budget subsidies" which include tax exemptions, credits, deferrals, rebates, preferential tax treatment, market access restrictions, regulatory support mechanisms, preferential planning consent, and access to natural resources. Other subsidies deemed "shadow R&D" includes monies spent by public institutions such as universities and nuclear physics institutions on extensive nuclear research. The author provides various illustrations on these subsidies in her book. It should be remembered that economic theory states that subsidies can be justified when they lead to an overall increase in social welfare. But

the environmental and health risks associated with radioactive waste, accidents, and risk of meltdown, nuclear proliferation, and the threat of terrorism decrease the overall contribution to social welfare provided by nuclear power. The United Nations Environment Protection (UNEP) organization specifically dictates that the removal of subsidies that are economically costly and harmful to the environment and to the people represents a win-win policy. It is hard to imagine a more poignant case in point than the nuclear power industry.

The actual cost of nuclear energy does not include the very significant toll it takes on human health. The *third chapter* titled "**Nuclear Power, Radiation, and Disease**" is an extensive one, which deals with the hazards of various forms of radiation on public health and environment throughout the nuclear cycle. Various types of radioactive elements affect workers at uranium mining and milling sites. Uranium miners who work below the ground are at great risk. These are exposed to a high degree of radioactive gas called radon 220. Radon is a highly carcinogenic alpha emitter, which, if inhaled, can decay in the lung and deposit in the air passages of the lung, irradiating cells that then become malignant. This process results in very high incidents of lung cancer.

It is reported that one fifth to one half of the uranium miners in North America, many of whom was Native Americans, has died and is continuing to die of lung cancer.

This is a common phenomenon in the all countries where uranium mining is undertaken,

including Jadugoda in India. Another lethal uranium daughter is radium 226, an alpha and gamma emitter with half-life of 1,600 years. This has a notorious history in medical literature. Uranium miners are exposed to uranium dust and thus radium gets absorbed from the gut and deposits in their bones. Uranium itself also deposits in bone, and it too is carcinogenic. Uranium ore also emits gamma radiation. So the miners are also exposed to constant, whole-body radiation emitted by other uranium daughters, which irradiated their bodies and continuously exposes their reproductive organs. Uranium mining creates large amount of debris/tailings, which is left lying in huge heaps adjacent to the mines.

These contain millions of tons of radioactive dirt, which constantly leaks radon 220 into air and rain also leaks soluble radium 226 through the tailing piles into underground water and then finally into food chain of the aquatic life and terrestrial plants.

At the uranium enrichment and fuel fabrication levels, workers are exposed to whole-body gamma radiation from the by products of uranium decay. The most serious aspect of enrichment is the material that is discarded uranium 238. This is called "depleted uranium" (DU) because it has been depleted of its uranium 235. But it is not depleted radioactivity. DU contaminated ground water around enrichment facilities.

Now DU is extensively used in military applications. In the 1991 Gulf War, the US used 360 tones of DU in the form of anti-tank shells in Iraq, Kuwait and Saudi Arabia. The invasion

of 2002 also resulted in hundreds of tones of DU by the US on the Iraqi soil.

The author considers that "in essence, the two Gulf Wars have been nuclear wars because they have scattered nuclear material across the land, and people particularly children are condemned to die of malignancy and congenital disease essentially for eternity. Because of the extremely long half-life of uranium-238, the food, the air and the water in the cradle of civilization have been forever contaminated."

Dr. Caldicott critically explains the process involved in nuclear power generation at length in this chapter. She says that at every nuclear reactor radioactive gases that leak from fuel rods are routinely released or "vented" into the atmosphere. Nuclear power generation process created over 200 new radioactive elements that did not exist until uranium was fissioned by man. A number of noble gases are emitted by nuclear reactors.

These are high-energy gamma emitters, and they are readily absorbed from the lung and enter the blood stream. These can induce significant mutations in the eggs and the sperm of the people living adjacent to a reactor. The important noble gases include: Xenon 137, Krypton 90, Xenon 135, Xenon 133, Krypton 85, Argon 39 and others include Xenon 141, 143 and 144. All these gases bio-concentrate in the food chain, and irradiate the lung, liver, skeleton, and gastrointestinal tract, and act as potent carcinogens. Another important emitter from nuclear power plant is Tritium. The biological impact Tritium makes is

chromosomal breaks and aberrations.

In animal experiments, Tritium has been shown to include a five-fold increase in ovarian tumours in offspring of exposed parents, while also causing testicular atrophy and shrinkage of the ovaries. It causes decreased brain weight in the exposed offspring and mental retardation with an increased incidence of brain tumours in some animals.

Increased parental mortality was observed in these experiments as well as a high incidence of stunned and deformed foetuses. Thus the argument that nuclear industry is "emission free" is a misnomer. In fact nuclear industry has been collectively releasing millions of curies annually.

This apart, the almighty problem of nuclear industry is the generation of radioactive waste. Each 1000-megawatt nuclear power plant generates 30 tones of extremely potent radioactive waste annually. Even though nuclear power has been in operation for 50 years, the nuclear industry has yet to determine how safely to dispose of this deadly material, which remains radioactive for tens of thousands of years. Most nuclear waste is confined in huge cooling pools beside the reactors, leaking and seeping through soils into aquifers, rivers, lakes and seas, where it enters and concentrates in the food chains of the plants, fish, animals and humans.

Beside these, this chapter examines several of the precise radioactive materials that the nuclear fission process creates, with their specific health impli-

cations for human being.

This section deals with adverse health implications of plutonium (a typical alpha emitter named after Pluto, the Greek god of hell), Iodine 131, Strontium-90 and Cesium-137.

Lastly, the chapter also analyses health and environmental impact studies done on the Three Mile Island in the US and Chernobyl in Ukraine nuclear reactor accidents.

In the *fourth chapter* titled "***Accidental and Terrorist-Induced Nuclear Meltdowns***" Dr. Caldicott explains that the nuclear power plants are vulnerable to many events that could lead to accidents and meltdowns, including human and mechanical errors, impacts from climate change, global warming and earthquakes; and terrorist attacks. She provides number of illustrations on mechanical and human errors in the US nuclear power plants, based on the available data (which is not available to public in the case of India), and problems associated with aging reactors in the US. Quoting David Lochbaum, a nuclear engineer from the Union of Concerned Scientists, who points out that, "Nuclear power plants are like people: they have numerous problems in their infancy and youth, they operate relatively smoothly in early-to-middle life, and they start to show signs of stress and manifest pathology as they age."

In thirteen-month period from March 7, 2000 to April 2, 2001, eight nuclear power plants were forced to shut down in the US because of potentially serious equipment failures associated with aging of their mechanical parts. These are result of flaws in the aging management

programmes of the National Regulator Commission (NRC) of the US.

Two kinds of fundamental flaws are being pointed out: 1). Looking in the wrong spots with right inspection techniques (as happened at the Oconee Unit 3 in South Carolina in February 2001 and Quad Cities Unit 1 in Illinois in January 2002) and 2). Looking in the right spots with the wrong inspection techniques (as happened with the Summer nuclear power plant in South Carolina in October 2000 and Indian Point Unit 2 nuclear power plant in New York in February 2000). The author also provides a case of near miss meltdown at the Davis-Besse reactor twenty-one miles south-east of Toledo, Ohio in February 2002). This Chapter also brings out flaws in the working of the NRC in the US.

Despite the legal binding on the part of the NRC to make its risk assessment studies on nuclear power plants public the NRC is not doing so. Moreover, the NRC acceding to industry's pressure it is issuing 20-year extensions, after completing the original stipulated period of 40 years for existing nuclear power plants. The author considers this as a very dangerous trend, which would further increase the mechanical and human errors in the maintenance of nuclear power plants.

In the next section of the chapter, the author explains possible threats to nuclear power plants as a result of natural calamities. She says that existing reactors designed before the advent of global warming was considered and hence they cannot sustain climatic changes. Global warming can induce

unpredicted and extreme weather events that could heat up the rivers and lakes from which nuclear power plants extract their cooling water. An adequate supply of water itself may also cease to exist as drought conditions take over. It was so happened in France in 2003 that the hot weather and lack of rainfall severely reduced supplies of cold river water, and when the river levels fell, the French power company, Electricity de France, resorted to cooling its nuclear power plants by hosing down their outsides with garden sprinklers supplied by reservoirs. Many nuclear power plants around the world are located by the sea and are susceptible to the effects of tsunamis. In 2004, a tsunami struck a reactor in India; although it did not induce a major accident, it did cause a degree of damage. The height of the tsunami that originated off the coast of Thailand in December 2004 was a massive ninety-eight feet.

There are a number of reactors located in different parts are just twelve feet above the sea levels. Further serious earthquakes can also cause very severe accidents in nuclear power plants despite their earthquake proof designs.

The last section of the chapter deals with security lapses and the possible terrorists threats and the resultant catastrophic effects of nuclear power plants as a result of meltdowns. The 9/11 Commission Report revealed that al Qaeda had considered plans to attack nuclear power plants. It was only because of their mistaken belief that the airspace around nuclear power plants was "restricted" and that

planes violating that air space would be shot down before impact that nuclear reactors were not attacked. The author cites the Time Magazine study security situation at nuclear power plants in the US. The study states that even after 9/11 security at nuclear plants is virtually unchanged, even though these facilities constitute potential weapons of mass destruction and, as such, are inviting targets for terrorists. As quoted by the author the study states that there exist various security lapses, which could result in the intruders entering nuclear power plants and cause damage/s and even meltdown of reactors. Not only nuclear power plants but also the external electricity supply to reactors and the emergency diesel generators upon which the safe operation of nuclear reactors depends are also susceptible to terrorist attack. These kinds of scenarios are also applicable to other countries also. In England Greenpeace commissioned a series of three reports that examined the results of an aerial terrorist attack on the nuclear complex at Sellafield (comprises of nuclear reactors, reprocessing plants, and high level waste storage tanks containing 1550 cubic meters of liquid waste plus tens of tons of separated plutonium) says that an attack could cause a radioactive fireball over a mile high. It would only take four minutes for a plane to be diverted from its regular flight path to the Sellafield nuclear complex in Cumbria and, in the event of an attack, twenty-five times as much radiation as that emitted from Chernobyl

would likely be released.

The *fifth chapter* titled "**Yucca Mountain and the Nuclear Waste Disaster**" brings out nuclear waste disposal problems in the US. In the last sixty-five years, nuclear industry, world over, has not taken responsibility for the massive amounts of profoundly lethal radioactive waste that has continued to produce at an ever-increasing pace. In the US during the 1970s it was assumed that nuclear waste can be stored in salt domes in Lyons, Kansas, but it was abandoned as these domes could be accidentally punctured by gas exploration holes. In 1982, the US Congress passed the Nuclear Waste Policy Act, promising to take responsibility for the nuclear waste management. In 1987 the Congress designated Yucca Mountain in Nevada as the primary repository. The stated requirement of a geological storage site is to prevent leakage and seepage of waste for at least 5,00,000 years. In the case of Yucca Mountain it came to limelight that it cannot achieve 5,00,000 years leak-proof and seepage proof mandate due number of reasons. These include: 1). Contaminated water from corroded casks could seep in the groundwater and spread into spring water irrigated areas used for farming and by protected species; 2).

Yucca Mountain being a volcanic remnant may produce volcanic event again leading to magma intrusion into the tunnels where the waste is stored, melting the canisters and if the volcanic event opens a path to the surface, radioactivity could be spread around the land-

scape; 3). Yucca Mountain is also located in an active earthquake zone. In 1992 a major 7.4 Richter measured quake occurred followed two days later by an additional 5.2 quake; 4). Yucca Mountain was thought to be waterproof as its soil must be dry to prevent corrosion. But much more water inside was discovered than originally estimated and that too with radioactive chlorine 36 contaminations, spill over effect of atmospheric nuclear tests conducted in 1950s and 1960s nearing this site. Thus Yucca Mountain is far too dangerous for a permanent home for nuclear waste storage. In addition to these, Yucca Mountain is located below the Nellis Air Force Base, Nevada where new military jet aircrafts are tested, war exercises are held and crashes happen that may have serious and unprecedented consequences.

Another important aspect of waste management not covered in depth in the case of Yucca Mountain project is the transportation of radioactive waste from around the country to this site on highways and by rail. It is estimated to take thirty years to move 70,000 metric tons of civilian and military spent fuel. Currently there is no prohibition on the shipping of this waste neither through highly populated areas nor during the periods of bad weather like severe snowstorms making driving hazardous. But it has been predicted that as many as fifty accidents a year may result, three of them involving serious release of toxic radiation that will contaminate the surrounding environment. To make the transportation further haz-

ardous, the author states that all the eleven of the storage casks currently used by the Department of Energy (DOE) for radioactive waste transport have been found to be defective. Despite this grave concerns, the Bush Administration is determined to proceed with the Yucca Mountain Project.

In the *chapter six* of the book titled "**Generation IV Nuclear Reactors**" Dr. Caldicott, given the long-standing record of lies and deception in promoting the safety and benefits of nuclear power by the industry/governments seriously express her doubts about future/all new technologies in the nuclear industry. The nuclear industry classifies its reactors according to "generation". Generation - I reactors were developed in the 1950s and 1960s. Some of these are still in operation in the United Kingdom. The majority of world's operating nuclear reactors are designated as Generation - II. These come under different varieties have fundamental design problems, some of which have been but rectified after the Chernobyl accident, other problems remain unattended. The Generation - III reactors, slightly different from Generation - II, are operating only in the US. The Generation - III and a so-called III + designs represent "evolutionary changes" from their predecessors despite the dangers associated with them. A newer Generation - IV "revolutionary" design is under development aim four objectives: sustainability, economics, safety and reliability and proliferation resistance and physical protection.

Dr. Caldicott debunks all these notions and calls them as "base less today (the absurd) 'too cheap to metre' (claim) was fifty years ago." She goes on to explain, "People with an intimate understanding of the nuclear industry are severely opposed to a nuclear renaissance" because of the unacceptable risks and most all other falsely claimed benefits associated with it. She quotes David Lochmann's (Nuclear Safety Engineer for the Union of Concerned Scientists) testimony before the House Government Reforms Subcommittee on Energy Resources on the Next Generation of Nuclear Power, who says that "It is inappropriate for the industry to talk about Generation - IV reactors when neither the US nor the rest of the world has a Generation - I high level waste disposal site, or has successfully operated even a Generation - III reactor." He recommends that before proceeding towards Generation - IV the governments must create a repository for high level nuclear waste management systems. The chapter analysis false claims of Generation -IV reactors with scientific and technical data. As the critiques argue, "Generation - IV" is nothing but a label created to sell the illusion to the public that a completely new generation of reactors in records is being developed, which is far from all the problems which are plaguing current nuclear installations. The primary goal of the Generation - IV argument lies in the securing of fresh financial means for nuclear research.

There is nothing like

"peaceful nuclear programmes". Nuclear activities are inherently violent at all the stages. The *seventh chapter* titled "**Nuclear Energy and Nuclear Weapons Proliferation**" establishes the fact that the nuclear power generation and nuclear weapons development are like seamy twins and thus they cannot be separated. Nuclear arms supermarket and dissemination of nuclear technology is vast, growing and dangerous. The British counterintelligence group MI5 states that over 360 private companies, university departments, and government organizations in eight countries, including Israel, Syria, Pakistan, Iran, India, Egypt, the Pakistan High Commission in London, and the United Arab Emirates (UAE), have been procuring nuclear technology and equipment for use in nuclear weapons construction. Front companies in Cyprus, Malta and the UAE in particular are involved in the nuclear weapons trade.

The coming "renaissance" of the nuclear power industry, twenty-five countries and consortia will have access over a period of two decades to Generation - IV reactors fuelled by plutonium. If, as proposed by some, 2,000 new nuclear power plants are constructed over the next decades on the fallacious grounds of combating global warming commercially produced plutonium (most dangerous of all the substances known) could increase to 20,000 metric tons by 2050, dwarfing the current amount in the world today and increasing the potential danger (as little as one-millionth of a gram is a carcinogenic dose)

from it enormously. Dr. Caldicott calls this "plutonium madness". In 1994, the National Academy of Sciences called the US and Russian military derived plutonium stockpiles alone "a clear and present danger to national and international security" because of the chance of any it falling into rogue hands. If a vastly larger stockpile is produced in so many places, it would be much harder to secure or keep track of. With sophisticated technology the minimum amount of plutonium required to make a bomb is 1 to 3 kilograms, however the generally accepted amount is 5 kg. of weapons grade plutonium and 8 kg. for reactors grade plutonium is required to make a bomb. So much of plutonium around with inadequate security, the temptation to do it would be greater.

Today eighteen countries have uranium enrichment facilities that enable them to produce fuel for nuclear weapons. Nine of these countries are now known to possess nuclear weapons. Seventy countries have small research reactors (under the legal auspices of the Nuclear Non Proliferation Treaty-NPT), most of which are fuelled with highly enriched uranium, a fuel also suitable for nuclear weapon production. These small research reactors also manufacture plutonium, making nuclear bomb materials available at each end of the research reactor's operation. Mohammed ElBaradi, the director of the International Atomic Energy Agency (IAEA) says these widely distributed nuclear facilities are "latent bomb plants". He esti-

mates that within a decade as many as forty more countries will have the ability to make nuclear weapons, and this may be an underestimate. With this situation as background, Dr. Caldicott opines that, the Bush administration has adopted some very provocative and dangerous policies—all of them in direct violation of the NPT—which inevitably have led and will continue to lead to the proliferation of nuclear weapons in other countries.

In the *chapter eight* titled "**Nuclear Power and 'Rogue Nations'**" Dr. Caldicott defines a rogue nation as "a state that possesses nuclear weapons and the ability to vaporize millions of people within seconds". Today eight or nine countries qualify as rogue nations. The two countries at the head of the "rogue" nations pyramid are - the US and Russia. These two countries possess vast majority of nuclear weapons in the world - 97% of the total arsenal of 30,000 bombs - and because these countries continue to maintain thousands of these extraordinary weapons on "hair-trigger" alert. Yet we persist in leaving them off the rogue roster. As for those countries currently vying to add nuclear capability to their arsenals (to become rogue states), nuclear power plans offer the perfect cover.

Most nuclear technology associated with nuclear power can be diverted for use in weapons production: This chapter examines how different countries built their nuclear arsenals using various components of the nuclear fuel cycle. Israel developed a very large nuclear arsenal from plutoni-

um created in a reactor specifically designated for that purpose, India created a nuclear arsenal from heavy water nuclear power plants and Pakistan developed nuclear weapons largely from uranium enrichment facilities. Israel, India and Pakistan are the only countries in the world with nuclear capabilities not to have signed the NPT. They have developed their own clandestine nuclear arsenals, and they have never been subject to IAEA verification inspections. As such, they are truly rogue nations, outlaws who choose not to abide by international law. North Korea has almost certainly built at least two nuclear weapons using plutonium obtained from its research nuclear reactors. Iran is pursuing a nuclear option it claims is for commercial use only. The country is a signatory to the NPT and, as far as known, is in full compliance with it. But there is no way to know what Iran's intentions are?

Dr. Caldicott considers that the US is directly responsible for all these developments. The US is most "roguish" of all and poses threat to world security and peace. It is waging two illegal wars in Afghanistan and Iraq, unconditionally supports Israel's right to do the same against the defenceless Palestinians and Lebanese and is threatening additional conflicts against Iran, Syria, Venezuela, and possibly North Korea.

In addition, the US claims the right and intent to pre-emptively use nuclear weapons if it wishes. The US is directly responsible for the sabotaging of the NPT Review

Conference at the United Nations in May 2005, to the despair and disgust of the rest of the world.

Being a signatory, the US violated the provisions of the NPT by concluding 'nuclear cooperation' agreement with India. Thus the US actions have become "biggest disgrace" in the process of nuclear non-proliferation and disarmament.

All through the book Dr. Caldicott makes fervent appeal to free the planet from the scourge of the nuclear threat that may destroy our planet. In the *ninth chapter* titled "**Renewable Energy: The Answer**" she makes it very clear that "there is no need to build new nuclear power plants to provide for the projected energy needs of the future... it would be possible using other forms of electricity generation to close down most of the existing nuclear reactors within a decade. There is enough wind (power) between the Rocky Mountains and Mississippi River alone to supply three times the amount of electricity that America needs." This chapter concentrates exclusively on renewable sources of power. According 2004 figures Dr. Caldicott states that about 2% of electricity in the US came from renewables, where as nuclear power provided 20%.

However, if the hydropower electricity is included, about 9% of electricity in the US came from renewables, and 18.60% came from renewables world wide in 2004. It is not that alternatives are not available but the politicians lack the political will to explore the alternatives. She maintains that

main problem in the US is the powerful lobby of fossil fuel and nuclear industry prevails over the energy policy decision making of the federal government.

Dr. Caldicott to strengthen her argument towards alternative energy sources quotes a 2005 study "Nuclear Power: Economics and Climate-Protection Potential" by Amory Lovins of the Rocky Mountains Institute which states that "Globally, nuclear power is being outstripped by the other, better sources of electricity production. Globally more electricity is now produced by decentralized, low carbon or non-carbon competitors than from nuclear power plants-about one-third from renewables (wind, biomass, solar) and two-thirds through a very efficient form of energy production in which electricity is made from waste heat emanating from industry-heat-and-power, or cogeneration." The study says that "decentralized capacity is projected to increase 177 times by 2010 and more of the centralized thermal power generators (coal, gas, oil or nuclear) can compete economically with wind power and certain other renewables." The study argues, "Most of the studies that examined the energy future, such as the oft-quoted 2003 MIT study, fail to examine the feasible economic alternatives to nuclear and large centralized generation." Further, according to same study "the oft-made claim by nuclear energy proponents that "we need all energy options" has no analytical basis and is simply not true." Quite the contrary, society cannot

afford all options, particularly the options, which have catastrophic consequences for longer-periods to come.

Quoting The New Scientist, a well-known scientific journal published from the UK and the US, Dr. Caldicott argues that "although renewable electricity technologies are heavily criticized by the nuclear, coal, and oil industries and many politicians who listen to industry propaganda, the combination of wind power, tidal power, microhydro, and biomass make renewable power even more practical. Wind power and biomass are now almost as cheap as coal, and wave power and solar photo voltaics are rapidly becoming competitive." A report from the New Economic Foundation supports these conclusions. Renewable energy is quick to build, abundant, and cheap to harvest, and it is safe, flexible, secure, and climate friendly. Renewable forms of energy, as stated in this chapter, are extremely effective carbon displacers per dollar. Nuclear power thus contributes to global warming by diverting renewable assets away from all environmentally sounder alternatives such as wind power, solar power, geothermal energy, biomass, and cogeneration, each of which produce very little if any carbon dioxide." To combat global warming the renewable sources alone are alternative. As the author says these are especially significant for the US because it is the world's most profligate consumer of energy. It also occupies number one position in terms of electricity relation

CO2 emissions. Of the total electricity related CO2 emissions by the world countries, the US alone contributes 24%. Western Europe, and industrialized Asia contributes 25%. Whereas the other 51% of CO2 emissions emanate from the rest of world countries put together.

In the last part of the chapter, Dr. Caldicott analyses two excellent alternatives sources of energy-wind power and solar power. Wind power is already used extensively in Europe and is rapidly becoming the energy of the future. It is cheap, fast to produce, and attractive to rural communities. In 2004 wind power globally outpaced nuclear power six fold in annual capacity additions and three fold in annual output additions.

Once again quoting Amory Lovins study she states that "Wind power is very attractive it is benign, its development has short lead times, its mass production is economically very efficient, its technological development is rapid, and it is easy to site windmills on available land. Furthermore, the speedy deployment and lack of regulatory fuss will always support the growth of wind power compared to the long lead time and delay-prone, complex, and contentious technology of nuclear power, which could experience a meltdown or terrorist attack at any time."

Dr. Caldecott states "Hypothetically 10 trillion to 20 trillion watts of solar power provided by photovoltaics could take the place of all conventional energy sources currently in use. Consequently, it has been estimated that a

rather inefficient photovoltaics array covering half a sunny acre could meet all the annual US electricity needs." Photovoltaic cells are becoming more efficient to produce and more efficient solar collectors. However, to create photovoltaic cells fossil-fuelled energy is required. A solar roof collector would take one to four years to recover the amount of energy that produced it, but because it has life expectancy of thirty years, 87% to 97% of the electricity it produces will not be inundated by pollution-green house gases or resource depletion. Solar arrays can be easily located as the ample space is available on rooftops, alongside roadways, or on unused desert landscapes bathed in sun.

The future production of massive numbers of solar collectors will require certain specialized materials, all of which are readily available, including even the rare minerals-indium and tellurium. The "reliability, technological improvements, and market penetration of concentrated photovoltaics have all advanced considerably in the last twenty years", says the author.

Whether renewables could provide a practical electricity supply when wind power in various places can be intermittent and solar power changes according to season, climate, and the like? Dr. Caldicott maintains that various studies have examined this "intermittency" problem related to renewables and solutions abound, including geographic aggregation of wind generators, improved weather forecasting techniques, timely

extension of transmission and distribution grids, transboundary (between states and countries) of electricity exchange, and a mixture of renewable energy technologies including hydro, biomass, wind, solar, tidal, wave, geothermal, and cogeneration all interconnected on the same grid. This multiplicity will provide the full potential of renewables for adequate electricity production.

In the last chapter titled "What Individuals Can Do: Energy Conservation and Efficiency" Dr. Caldicott comes with a number of practical suggestions that the individuals can adopt to arrest the problem of global warming and drift towards unparalleled catastrophe. She questions that when the Europeans live the same standard of life as Americans with 50% less energy per-capita than Americans, why cannot the Americans do the same? Energy efficient technologies have been available for many years, and they become sophisticated daily. Enough energy efficient measures and technologies are currently available to reduce electricity demand between 11% and 23 % over the next five years and between 25% and 35% by 2020.

Dr. Caldicott quotes a study performed in 2004 by Synapse Energy Economics, titled "A Responsible Electricity Future" which comes out with a number of practicable energy efficient measures as against the analysis done by the US Energy Information

Administration under the Department of Energy which

forecasts more than 50% increase in the electricity consumption in the US. The Synapse study suggests policy initiatives in the direction of energy efficiency, cogeneration, renewables, and natural gas. What is required is, as Dr. Caldicott says, aggressive, concerted, long-term public policy initiatives will be required to implement efficiency related decisions in the market and to alter the way that people buy and use electricity appliances. These decisions will be made only if governments take collective responsibility and conduct massive educational campaigns to inspire commercial enterprises and the public about the importance of concerning energy and how to do it. Dr. Caldicott calls for the enactment of laws mandating responsible living and suggests individuals to adopt various measures of energy efficiency such as efficient light fixtures, energy classified refrigerators, solar hot-water systems, weatherizing of houses, installing solar electricity generators on roofs.

Lastly she concludes the chapter by saying "It is up to the individuals throughout the world to choose a better approach to energy in the future. The nuclear option is neither desirable nor viable". But, as the Synapse study makes it clear, "other options exist, and it is up to governments and citizens to implement them with urgency."

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VI. CNDP in Action

Public Meet on Indo-US Nuclear Deal in Delhi

A number of peace and social activists, journalists, intellectuals and representatives of many social organizations attended a discussion on Indo-US Nuclear Deal organized by the CNDP in New Delhi on July 19, 2008. The chief guest of the programme was well known writer-activist Mahashweta Devi and among speakers were Praful Bidwai, ND Jayaprakash, Sandeep Pandey, M V Ramana and Achin Vanaik. Veteran Journalist Prabhash Joshi, slated to chair the programme, could not eventually attend on account of his ill health.

On this occasion, Mahashweta Devi emphasised on the awareness programmes and campaigns among common people against the dangers like nuclear deal and also suggested booklets be published on the issue exposing the government and its readiness to surrender its sovereignty to the USA. Calling young people and students to

come forward against the hype of nuclear energy, she narrated the Haripur episode of West Bengal where in 2006 the government tried to initiate a nuclear power plant.

Achin Vanaik pointed out that the Indo-US nuclear deal was an US initiative, not an Indian one, and said that India would be nothing, but a junior strategic partner of the 'Empire Project' of the USA. Praful Bidwai explained why the deal should be seen in the light of Iraq war, which had given a jolt to the global campaign for the American hegemony. M V Ramana presented a detailed view on the deal in his presentation. He brought out that other sources of energy would be better than the dangerous and expensive nuclear energy. Magasassay awardee peace activist Sandeep Pandey expressed his apprehensions that the deal would prod China to expand its weaponry and causing instability and insecurity in the

Asian sub-continent as well as in the whole world and thereby further damaging the prospects for global nuclear disarmament.

The discussion was followed by a vigorous and stimulating question-answer session. The distinguished participants included Mukul Sharma (Amnesty International-India), Sumit Chakravarty (Editor, *Mainstream*), Manisha Sethi (Forum for Democratic Initiatives), A K Arun (Editor, *Yuva Samvad*), Javed Naqvi, Suhas Borkar Vineeta Bal and Anil Chaudhary (CNDP), Wilfred D'Costa (INSAF), Ajit Jha and Rajendra Ravi (NAPM), Madhuresh (CACIM), Manju Menon (Kalpaviksh), and a number of students from the Lady Sriram College.

Report filed by Rajesh Chandra





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.

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