

'ATOM FOR WAR'

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It is very hard to separate the civilian aspect of atomic energy from the military aspect of nuclear bombs. Both Bhabha and Nehru recognized this. As Bhabha himself pointed out, "the rise of an atomic power industry ...will put into the hands of many nations quantities of fissile material, from which the making of atomic bombs will be but a relatively easy step." Nehru, for his part, said at the opening of the Atomic Energy Establishment in Trombay (later renamed the Bhabha Atomic Research Centre) that "I should like to say on behalf of my government... [and] with some assurance on behalf of any future Government of India ...[that] we shall never use this atomic energy for evil purposes." Of course, Nehru also recognized that the civilian and military aspects of nuclear energy could not be separated. Several years earlier, in the Constituent Assembly debates, he conceded: "I do not know how you are to distinguish between the two [peaceful and military applications of atomic energy]".

Nevertheless, for four decades, successive Indian governments sought to publicly maintain this distinction. In 1974, at the time of the first Pokhran nuclear test, the Indian government argued that it was testing nuclear explosives for possible civilian uses. This is why this explosion was called a "peaceful nuclear explosion." "Absolutely categorically, I can say we do not have a nuclear weapon," Rajiv Gandhi declared in 1985. This ended with the 1998 Pokhran blasts. Pramod Mahajan, a representative of the "future government" of the time, clarified that that nuclear weapons were "not about security"; rather, the significance of the Pokhran blasts was that "no Indian has to show his passport [since] the whole world now knows where India is."

The research for both the "peaceful nuclear explosion" of 1974 and the later atomic tests of 1998 was largely performed at BARC. In fact, as P K Iyengar, a former chairperson of the Atomic Energy Commission, helpfully explains, "the exercise of detonating a nuclear explosive was ... a small deviation from the normal work carried out by many scientists and engineers at Trombay. This was the reason ... the whole project remained a secret."

Other than the issue of overlapping research, there is the important issue of the buildup of fissile materials. India's nuclear explosions have used plutonium. The plutonium that is most commonly used in nuclear bombs is called weapons-grade plutonium and, by definition, this contains more than 93 percent Pu.

Pu is produced even in electricity-generating reactors when U absorbs a neutron. However, when a reactor is meant to generate electricity, the uranium fuel-rods are kept in for a long time to use up as much of the uranium as possible. In this time, other nuclear reactions happen and the spent fuel in reactors ends up also containing other isotopes of plutonium, including Pu. The presence of these other isotopes makes it difficult to make bombs with this kind of reactor-grade plutonium.

However, research reactors, in which the fuel-rods are pulled out after *low-burnup*, can be used to produce weapons-grade plutonium. The fissile material for the 1974 Pokhran explosions came from the research reactor, CIRUS. The history of CIRUS is quite interesting. CIRUS stands for "Canadian Indian reactor,

US" because the design was Canadian, the heavy-water used was American and the fuel was Indian. The Canadian negotiators imposed no explicit conditions on how the fuel from this reactor could be used. In fact, an Indian commitment that the fuel would be used peacefully was placed in a *secret* annex to the treaty! Furthermore, while the initial idea was that the fuel would be supplied by the Canadians, the Indian side pre-empted this and succeeded in fabricating indigenous fuel rods in time for use in the reactor. This allowed India to argue that it could do as it wished with the spent fuel from the reactor because the fuel, after all, was Indian.

This use of the plutonium from CIRUS is often discussed in the context of proliferation caused by the supply of peaceful nuclear technology. Some accounts, such as that of Abraham, portray this sequence of events by suggesting that the well intentioned but somewhat injudicious Canadians were outmanoeuvred by the nefarious Indians. This conclusion arises from the axiom that Western countries are always well-intentioned.

These narratives need not be taken seriously. The Canadian technology transfer was undoubtedly done with the full knowledge that it would help India produce weapons-grade fissile material. A more pertinent question to ask is: "What were the calculations that led the imperialist world to encourage India to arm itself with nuclear weapons? "

In fact, a few years later, the Americans almost directly provided India with a nuclear bomb! Perkovich describes that in 1964, the US defense department conducted a secret study examining the "possibilities of providing nuclear weapons under US custody" to "friendly Asian" military forces for use against China. At the same time, the US Atomic Energy Commission was *independently* exploring the possibility of helping India conduct nuclear explosions for 'civilian' purposes. While neither of these two initiatives was brought to fruition, this goes to show that the commonly made assumption that the US ruling elite is uncomfortable with Indian nuclear weapons is incorrect. There are opposing forces within the American establishment and, very similar tensions continue to operate today.

In 1985, India built a companion to CIRUS called Dhruva. Dhruva adjoins CIRUS but is significantly larger, and can also be used to produce weapons-grade plutonium. A study by Mian et al estimates that India has built up a stockpile of 500 kg of weapons-grade plutonium from CIRUS and Dhruva. This is enough for more than a hundred nuclear warheads.

For one thing, it is hard to build nuclear weapons with the plutonium that is produced in power-reactors. However, this is not impossible; bombs using reactor-grade plutonium can be built. In fact, there is some evidence that in the 1998 blasts, reactor-grade plutonium was used. If this is true, then the amount of fissile material available to the Indian government is considerably larger than the estimate above, since large stockpiles of spent reactor fuel are available.

The fast breeder programme, which constitutes the second stage of the three-stage programme, is quite important here. Fast breeder reactors work with a fuel core and also a blanket of uranium. This blanket breeds weapons-grade plutonium. Glaser and Ramana estimate that the Prototype Fast Breeder Reactor (PFBR) under construction at Kalpakkam might itself allow India to produce 140

kg of plutonium every year. This would allow the Indian government to greatly increase its nuclear arsenal.

In this context, it is relevant to note that one of the key initial disagreements between the US and India was over whether the FBR programme would come under IAEA safeguards. When asked whether the breeders would be put under safeguards, Kakodkar replied, "no way, because it hurts our strategic interests" and suggested that he would rather have the deal sink.

In the final deal, breeder reactors were kept out of IAEA safeguards. Once again, it is somewhat naive to attribute this to India's negotiating skills or American innocence and simple-mindedness. There was evidently disagreement between different sections of the American ruling elite. Stephen Cohen, from the influential Brookings Institution, claimed that "we [the US] probably could have put more restraints on the fast breeder reactor program." However, "Bush stopped the negotiations." Hence, this was a political decision. As in the case of CIRUS, a section of the western ruling-class seems to have decided that it was in its interests to allow India to arm itself with nuclear weapons. In both cases, it is quite plausible that this was intended to build India into a nuclear armed regional counterweight to China.

Highly enriched uranium can also be used for military purposes. India's facilities to enrich uranium are somewhat poor. India has two gas centrifuge enrichment facilities. One is at BARC and the other is at Rattehalli, near Mysore. According to Mian et al India could have built up a stockpile of about 400-700 kg of 45-30 percent enriched uranium. Another study estimated that India might have 94 kg of 90 percent enriched uranium. This enriched uranium was undoubtedly used in India's nuclear submarine project and can also be used to make bombs.

To summarize this section, it is clear that the Indian atomic energy programme has had a major weapons component. In some cases, like the fast breeder reactor, the objective of the reactor seems to be, not to produce energy, but rather to use energy as a veneer to cover up a weapons-making factory. More broadly, it is quite possible that, despite the failure to produce electricity, the atomic energy programme has received state patronage because of its contribution to India's nuclear bomb. An unconfirmed anecdote might be relevant here. Ashok Parthasarathi, an adviser to Indira Gandhi at the time of Sarabhai and Homi Sethna claims that he repeatedly brought up the DAE's failure to produce atomic energy and objected to its plans for future expansion. He claims that he was finally overridden by P N Haksar who explained to him that there are *larger objectives* to nuclear programme than nuclear power and those objectives cannot be compromised at any cost. (emphasis in the original)

The atomic energy discourse in India is marked by a high level of disingenuity. The Department of Atomic Energy (DAE), has repeatedly made fantastic projections for the amount of energy it will produce, only to fall far short each time. Predictions of this kind were used to argue in favour of the nuclear deal in 2008.

Nevertheless, the Government seems determined to invest heavily in atomic energy. The DAE claims that the nuclear expansion will be through a three-stage programme but this is very unlikely. A far more likely scenario is that nuclear

energy will develop through conventional indigenous and imported reactors using uranium as a fuel.

Although there has been a partial revival of interest in nuclear energy worldwide because of concerns about climate-change, it remains more expensive than comparable sources of energy like coal. Since India's uranium resources are very poor, a large scale expansion of atomic energy in India will necessarily lead to dependence on foreign countries. Furthermore, safety considerations in India are exacerbated by the absence of a proper regulatory framework.

The civilian and military aspects of the nuclear programme have always been linked, and weaponization is an extremely important aspect of the planned nuclear expansion. The new prototype fast breeder reactor and the increased availability of uranium after the nuclear deal will allow India to build up a large weapons stockpile. The US has actively encouraged this weaponization programme, and this holds the danger of setting off a weapons-race in Asia.

While energy is required to meet many human needs, the current model of development extrapolates this to infinity; this should be challenged vigorously. Unfortunately, even within this framework, the planned nuclear expansion makes for poor policy.

Why was the nuclear deal so important for the Government that it was willing to risk its very survival to ensure its passage?

When the Government decided to go ahead with the nuclear deal (in mid-2008), this precipitated a political crisis because the Left parties withdrew their support to the UPA government. While the Congress eventually emerged unscathed from this crisis and even returned to power with an enhanced majority, this was not at all clear at the time; the Government could well have fallen. Moreover, the time was hardly propitious for elections. Among other things, inflation was at a 13 year high! Surely, it was suicidal for the Congress to destabilize its government in such a scenario? What were the strong forces that impelled it to undertake this bizarre behaviour?

The Government argued that the nuclear deal was necessary for energy security. However, atomic energy is rather unimportant for India's energy needs and is likely to remain so. The nuclear deal was not even critical for the weapons programme. While the availability of international uranium will free domestic resources for use in weapons, the primary buildup in fissile materials is likely to come from indigenous fast breeder reactors.

One argument is that the Government was taken in by its own propaganda. However this seems unlikely. Moreover, even going by the DAE's figures, atomic energy will not contribute significantly to India's energy mix for many years to come. So this argument leads to the conclusion that the Congress was so perspicacious that it was willing to sacrifice its government for a small gain in India's energy-security several decades later. Evidently, the argument is incorrect.

Another argument is that the nuclear deal was pushed by the Indian atomic energy establishment which desperately required a lifeline for its civilian energy programme. While this might have been a factor, it seems unlikely that a major political decision of this sort was taken under the influence of technocrats.

A far more believable answer was given by Ashley Tell, an important adviser to the Bush administration. Tellis noted that the deal was "extremely important." He went on to say : "It is the centerpiece of everything ... for the simple reason that it goes fundamentally to the President's and the prime minister's efforts to build a new sense of trust... In my view, this is the ultimate reason why it cannot fail, why it must not fail, because both leaders have staked a lot in trying to do something really important-something that implicates issues of credibility, issues of commitment, and finally issues of confidence for the future of the relationship."

However, what do terms like "credibility" and "commitment" really mean in the context of an alliance with the US? The answer is quite clear and forms a cornerstone of American foreign policy.

Credible governments are those that do not allow *domestic political compulsions* to prevent them from adhering to American interests. This is extremely important. The American ruling elite does not enjoy dealing with the vagaries of third world denizens. A 'trustworthy ally' is a country that manages domestic politics well and keeps its 'international commitments.'

As Chomsky pointed out, "attitudes toward democracy were revealed with unusual clarity during the mobilization for [the Iraq] war." Even old Western allies like France and Germany were pushed off to "Old Europe" because domestic considerations prevented them from supporting the Iraq war. Chomsky noticed that "the governments of Old and New Europe were distinguished by a simple criterion: a government joined Old Europe in its iniquity if and only if it took the same position as the vast majority of its population and refused to follow orders from Washington."

Influential figures on both the American and Indian sides were in agreement on this issue. Ronen Sen, India's ambassador to the US, explained that the failure of the deal would leave India with "zero credibility." He pointed out that the despite having "revolving door" governments, "one thing that distinguishes India ... is that we have always honoured our commitments ... not just that it is a democracy." He regretted that at the state level, this had not always been true and that in "one instance ... after an election a state government changed one contract, and that is Enron"! Evidently, according to Sen, elections and the wishes of the people should not come in the way of fulfilling obligations, however onerous or unjustified, to multinational corporations or the US government.

Ashton Carter, a member of the Clinton administration, explained to the US senate that "India's bureaucracies and diplomats are fabled for their stubborn adherence to independent positions regarding the world order, economic development, and nuclear security." He lamented that the fact that "India... is a democracy" meant that "no government in Delhi can ... commit... to a broad set of actions in support of US interests."

The Indian ruling elite was very unhappy with this fact also. When the Left parties stalled the nuclear deal, Chidambaram went on record stating that "Indian ... democracy has often paralyzed decision making ... this approach must change." Manmohan Singh was so upset that he began to question the efficacy of a multi-party system itself. In a conference on federalism, he asked, "does a single party state have any advantages" and wondered whether "a coalition ... [was] ...

capable of providing the unity of purpose that nation-states have to often demonstrate."

What is almost conclusive is that, after a long stalemate, the Congress chose to precipitate a showdown with the Left parties exactly a week before Manmohan Singh was to attend a G8 summit in Japan. As the *Times of India* explained, "the prime minister has consistently cited the possibility of an embarrassing loss of face with the international community to lobby the Congress leadership." Evidently, the reason that Manmohan Singh was desperate to pass the nuclear deal had nothing to do with electricity, but was related to maintaining his credentials as a reliable [American] ally.

The Indian parliamentary system, for all its iniquities, is based on the notion that governments privilege their survival over all else. The fact that the Congress was willing to violate this tenet and imperil the existence of its own government to fulfil commitments made to the US is a revealing indicator of the strength of its ties to imperial powers.

[Source : Excerpted from 'India's Atomic Energy Programme : Claims and Reality'. Aspects to India's Economy, no. 48, RUPE]

*Contrary to a widespread belief, this oxymoronic term was not invented by the Indian government. The American government had for long argued for the use of nuclear devices for civilian purposes such as broadening canals. Bhabha simply adopted the terminology from an American study on the *Peaceful Uses of Atomic Explosions*.

The word "proliferation" is, of course, problematic because it is applied only to the spread of weapons of mass destruction outside the control of western governments.