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Civil Liabilities for Nuclear Damages Bill 2010 The Way Forward

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Background

The oil spill in the Gulf of Mexico and the Bhopal tragedy have brought back into focus the issue of industrial accidents, contractual liabilities and questions of operator liability. The Bhopal tragedy which is closer to Indian hearts has engaged the Indian Government and Courts for over twenty six years and yet a solution acceptable to victims and other stakeholders is proving to be elusive. Every step from the Government and the Courts has been welcomed only with exasperated cries of 'not enough', 'too little' and 'too late'.

Many questions remain unanswered: who was liable to compensate the victims of Bhopal Gas Tragedy? What ought to have been done to ensure immediate compensation to the victims? Could a structured legal regime have made the difference? Should there have been a liability regime in place before allowing units of the likes of Bhopal to be set up? Did India pay

for the absence of a liability regime in terms of human lives, livelihoods and irreversible environmental degradation?

The World saw the Bhopal Gas Tragedy (1984) & the Chernobyl accident (1986) follow in quick succession to each other. Though both accidents had different backgrounds, they opened up appreciation of the magnitude of damage and loss such tragedies could cause, especially nuclear tragedies which do not recognise any geographic or temporal boundaries. Damage caused by ionizing radiation to human cells may remain latent for a long time before manifesting itself. Even the best of safety standards cannot completely exclude the possibilities of nuclear accidents and in this light, the need to have a legal regime to compensate for damage and losses arising from nuclear accidents in India becomes evident.

Increasing energy availability in general and electricity availability in particular is not merely an

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economic pursuit for India but a social necessity. Enriching the quality of life of millions of 'energy poor'. Indians while also facilitating the integration of their livelihoods into the formal economy is not possible without the supply of electricity. Nuclear energy is particularly attractive for electricity generation in India as India has entered a resource intensive high economic growth path just as the World has begun to acknowledge natural limits in the supply of cheap and easily accessible fossil fuels along with the consequences of Green House Gas (GHG) emissions that result from the combustion of fossil fuels.

The Status of Nuclear Power Generation in India

India currently has 19 operational nuclear power plants with the total capacity of 4.5 Giga Watts (4500 MW). Four more reactors under construction would add another 2.7 Giga Watts (GW). Russia has traditionally been the major source of nuclear fuel to India since the early 1990s. Dwindling domestic uranium reserves and sanctions on supply of fuel following India's nuclear weapons tests restricted nuclear fuels availability and thus limited power generation capacity to a mere 3 percent of total installed power generation capacity. According to optimistic estimates, nuclear power generation capacity in India is expected to increase to about 35 GW by 2020 when the demand for power is projected to stand at about 350-400 GW. The waiver from the Nuclear Suppliers Group in September 2008 has facilitated the entry of India into international nuclear trade and India has already signed nuclear deals with several countries including France, United States, United Kingdom, Canada, Namibia, Mongolia, Argentina and Kazakhstan. In February 2009, India also signed a \$700 million deal with Russia for the supply of 2000 tonnes nuclear fuel. India now envisages increasing the contribution of nuclear power to overall electricity generation capacity from 3 percent to 9 percent in the next 25 years.

The Case for Nuclear Power

The World's population is expected to increase from the present 6 billion to about 8 billion over the next

25 years, and perhaps 10 billion later in the century. Such a dramatic increase in population will have a dramatic impact on energy demand. At the very least, energy demand is expected to double by 2050, even if developed countries adopt effective energy conservation policies that reduce their growth in energy demand to zero. Global coal reserves are estimated to be abundant but how much of it would be mined and used for power generation in the future is uncertain given that combustion of coal is among the most important sources for GHG emissions, the most probable cause of 'climate change'. Coal accounts for only about 25 percent of total global primary energy supply but it contributes over 42 percent of energy related carbon emissions.

The energy density of uranium compared to that of coal and other fossil fuels also adds to the attractiveness of nuclear power. Assuming a thermal efficiency of about 33 percent, a 1 GW power station would consume roughly 3.1 million tonnes of black coal each year while a nuclear power plant of the same capacity would consume only about 24 tonnes of enriched uranium.

In other words, ten trucks filled with coal will be required to make 380,000 trips to fuel the power plant while just a single trip by ten trucks carrying uranium will be sufficient if the power generator was based on nuclear fuel. If the energy required by the trucks is factored in, the net energy gain or the return on energy invested in a coal based power plant reduces substantially.

The merits of nuclear power cannot however mask the grave risks involved in harnessing that power. Both coal and uranium require intensive mining which invariably use 'human energy' which is not registered in any energy balance sheet. This risk shrinks in significance when compared to the risk of accidents in nuclear reactors due to mishandling of nuclear material or a fault in the nuclear reactor.

Since 1950, there have been 23 nuclear accidents in nuclear reactors around the globe with the latest occurring in 2006. Out of these the biggest was the Chernobyl disaster which claimed more than 4000

human lives. The long-term storage of radioactive waste is yet another factor that adds to the risk of nuclear power generation. Nuclear damage has such a wide range that when nuclear installations are built close to national borders, the fall out from a nuclear accident cannot be confined to national borders.

Despite the magnitude of risks that harnessing nuclear energy entails, very few countries have the luxury of not including nuclear power as one of their key energy options for the future. The geological limits to the availability of fossil fuels such as coal, oil and natural gas and the risk of climate change make it necessary that energy poor countries such as India invest in harnessing nuclear energy.

International Nuclear Liability Regimes

The nature and magnitude of liability regimes varies widely across nations. Before 1997, the international liability regime was embodied primarily in two instruments namely; the International Atomic Energy Agency's ("IAEA") Vienna Convention on Civil Liability for Nuclear Damage of 1963 (entered into force in 1977), and the OECD's Paris Convention on Third Party Liability in the Field of Nuclear Energy of 1960 which entered into force in 1968 and was bolstered by the Brussels Supplementary Convention in 1963.

These Conventions were linked by the Joint Protocol adopted in 1988 to bring together the geographical scope of the two. They are based on the concept of civil law and share the following main principles:

- Liability is channelled exclusively to the operators of the nuclear installations;
- Liability of the operator is absolute, i.e. the operator is held liable irrespective of fault, except for 'acts of armed conflict, hostilities, civil war or insurrection';
- Liability of the operator is limited in amount. Under the Vienna Convention the upper ceiling is not fixed; but it may be limited by legislation in each State.

- Liability is limited in time. Generally, compensation rights are extinguished under both Conventions if an action is not brought within ten years;
- The operator must maintain insurance or other financial security for an amount corresponding to his liability or the limit set by the Installation State, beyond this level the Installation State can provide public funds and can also have recourse to the operator;
- Jurisdiction over actions lies exclusively with the courts of the Contracting Party in whose territory the nuclear incident occurred;
- Non-discrimination of victims on the grounds of nationality, domicile or residence.

States with a majority of the world's 440 nuclear power reactors are not yet party to any international nuclear liability convention, and each State relies on its own arrangements. Beyond the international conventions, most countries with commercial nuclear programmes also have their own legislative regimes for nuclear liability which vary from country to country. There are three categories of countries in this regard:

- those that are party to one or both of the international conventions and have their own legislation;
- those that are not party to an international convention but have their own legislation (notably USA, Canada, Japan, South Korea);
- those that are not party to a convention and are without their own legislation (notably China).

Highlights of some National Nuclear Liability Frameworks

The USA, which pioneered the concept, has shied away from being a party to any international nuclear liability convention; yet it has had the world's first comprehensive nuclear liability law since 1957-the Price Anderson Act which is central to addressing the question of liability for any nuclear accident. It currently provides \$10 billion as cover without cost

to the public or government and without fault needing to be proven. It covers power reactors, research reactors, and all other nuclear facilities.

In the UK, the Energy Act 1983 brought legislation into line with earlier revisions to the Paris/Brussels Conventions and set a new limit of liability for particular installations. In 1994 this limit was increased to £140 million for each major installation, so that the operator would be liable for claims up to this amount and needed to insure accordingly. Beyond £140 million, the current Paris/Brussels system applies, with government contribution of SDR 300 million (€360 million).

Germany has unlimited operator liability and requires €2.5 billion security which must be provided by the operator for each plant. This security is partly covered by insurance, up to €256 million.

France requires financial security of € 91 million per plant.

Switzerland (which has signed but not yet ratified the international conventions) requires operators to insure to €600 million. It is proposed to increase this to €1.1 billion and ratify the Paris and Brussels conventions.

Finland has ratified the 2004 Joint Protocol relating to the Paris and Vienna conventions and in anticipation of this coming into force has a Nuclear Liability Act, 1972 amended in 2005 which requires operators to take at least € 700 million insurance cover.

Sweden has also ratified the 2004 Joint Protocol relating to Paris and Vienna conventions. The country's Nuclear Liability Act requires operators to be insured for at least SEK 3300 million (EUR 345 million), beyond which the state will cover up to SEK 6 billion per incident.

The Czech Republic is moving towards ratifying the amendment to the Vienna Convention and in 2009 increased the mandatory minimum insurance cover required for each reactor to CZK 8 billion (€ 296 million).

In Canada the Nuclear Liability and Compensation Act, 1976 is also in line with international conventions and establishes the licensee's absolute and exclusive liability for third party damage. The limit of C\$75 million per power plant set in 1976 as the insurance cover required for individual licensees was increased to \$650 million in the Act's 2008 revision, though this has not yet been passed.

Japan is not party to any international liability convention but its laws namely the Law on Compensation for Nuclear Damage and Law on Contract for Liability Insurance for Nuclear Damage, confirm to the international conventions and are revised about every ten years. Plant operator liability is exclusive and absolute, and power plant operators must provide a financial security amount of 60 billion yen (\$ 600 million). From 2010, this doubles to 120 billion yen (\$ 1.2 billion). Beyond that, the government provides coverage, and liability is unlimited.

Russia is party to the Vienna Convention since 2005 and has a domestic nuclear insurance pool comprising 23 insurance companies covering liability of some \$350 million.

Ukraine is a party to the Vienna Convention since 1996 and also became signatory Joint Protocol and the CSC; and domestic liability law of 1995 has accordingly been revised. Operator liability is capped at 150 million SDRs (€180 million).

China is not party to any international liability convention but is an active member of the international insurance pooling system and its 1986 interim domestic law on nuclear liability corresponds with international conventions.

India: The Civil Nuclear Liability for Nuclear Damage Bill, 2010

The Indian Government introduced the Civil Liability for Nuclear damages Bill, 2010 ("The Bill") in the Lok Sabha on 15th of March, 2010 to enable the initiation of a Nuclear Power Era in India. The Bill defines certain words and expressions including

'nuclear damage', 'nuclear incident', 'nuclear installation', 'nuclear material', 'nuclear reactor', 'operator', etc. It proposes that the Atomic Energy Regulatory Board, constituted under the Atomic Energy Act 1962, shall notify nuclear incidents within a period of 15 days from the date of its occurrence. It further provides that the maximum amount of liability in respect of each nuclear incident shall be the Rupee equivalent of SDR 300 million (~Rs 2000 Crores).

The Bill provides for the liability of the operator and Central Government in case of a nuclear damage. The liability of the operator, whether public or private, is capped at Rs. 500 Crores. The Central Government can, by notification, increase or decrease the liability of the operator. The Central Government shall be liable for nuclear damage beyond Rs 500 Crores subject to maximum of Rupee equivalent of 300 million SDRs.

In its current form, the Bill has been drawn flak for being a sell-out to foreign and domestic commercial interests that want to enter into the lucrative nuclear supplies market in India without taking on any responsibility for safety and compensation issues and also for accepting the principle that the value of human lives in India as well as property is not only different from but inferior to the value ascribed in developed countries. The Bill is inadequate even if it was drafted primarily to address the concerns of the 'operator' of a nuclear power plant as there are enough loop holes in the Bill that can entrap the operator into unlimited liabilities.

The Bill essentially seeks to legally channel the liability for accidents to the operators, give operators an extremely limited right of recourse against suppliers in the event of an accident and also set aside ordinary tort law so as to disallow fault-based claims by victims against operator or supplier. If the Government wants to signal interest in the victim rather than interest in the nuclear industry, it is necessary that the Bill is reworked meticulously to reflect economic channelling of liability rather than mere legal channelling of liability.

Key Outstanding Issues

Operator liability

In Section 6 (2) of the Bill, the liability of the operator has been limited to Rs 500 crore. The Vienna Convention does not limit operator liability in any way. As far as the Paris Convention is concerned, it is restricted to members of OECD. India is not bound by either convention as such to restrict operator liability at any particular level. Therefore, Section 6(2) can be modified, in theory, to include any level of liability or even unlimited liability. In order to determine the maximum liability, section 6(1) will have to be adjusted according to the level set in Section 6(2), keeping in mind that the maximum liability cannot be less than that of the operator's liability.

The issue here is that making the liability unlimited and seeking insurance cover for the same would make any project unviable as the operator will never be able to secure either the insurance or the required finance for the project. There has to be a limit on liability but whether Rs 500 crore is a satisfactory limit for the operator's liability is rightly being challenged by the members of the Parliament. Simplistic arguments that list countries which have lower liability limits only convey the message that the liability limit was arbitrarily chosen. It is a welcome development that the limit is likely to be increased threefold or more in the revised version of the Bill. An upward revision of the operator's liability will strike the right balance between making the legal and regulatory regime attractive enough for potential private investors in the nuclear sector while also ensuring that human life in India is neither under-valued nor the constitutional right to life compromised.

Though the financial consequences of lost earnings are relatively low in India as compared to the industrialised world, the high density of population in India and the fact that the tort law in India has not evolved to the extent it has in industrialised countries make it necessary that the limits to operator liability in the Bill are revised upwards. Compensation under tort law emanates out of judicial discretion and not

necessarily codified in law. As the Indian society evolves there will be greater realisation that the precautionary principle and 'polluter pays' principle have to be implemented with punitive costs. Moreover given that inflation has wiped out substantial value out of the meagre compensation awarded to the victims of the Bhopal tragedy, a clause for linking the maximum liability of the operator to the inflation index is necessary.

Traditional insurance solutions are absent in the nuclear industry as the catastrophic nature of the potential damages move it beyond the capacity of commercial insurers to cover it under their own capacity. National risk insurance pools have emerged in nations with nuclear plants and these national pools in turn, reinsure other pools in order to spread risk to the extent possible. If the idea of a nuclear risk insurance pool was put forward at this stage, it would have conveyed the serious intent of the Centre to have in place a comprehensive mechanism to deal with all the issues relating to nuclear damage. The pooling mechanism for risk sharing will entail risk inspections and sharing of expertise by other nuclear insurance pools. This will benefit the Indian nuclear industry which lacks experience in Light Water Reactors which may be imported in the future. It will bring best practices in risk management into the industry and serve to make our nuclear facilities safer to operate.

The Bill provides only 'liability' and not 'absolute liability' betraying a built-in escape option provided for both the operator and the Government. The CSC provides that the liability of the operator is absolute, i.e., the operator is held liable irrespective of fault. The exclusion of absolute liability creates ambiguity on what the Government's real objective is in promoting the Bill. Absolute liability cannot be calculated immediately after an accident but the Bill must ensure that absolute liability is provided for and the responsibility jointly shared between the operator and the Government.

The Bill further excludes the liability of operator for any nuclear damage:

- Caused to a person on account of his own negligence
- Caused to a nuclear installation itself, on the site where installation is located or to any property or any means of transport

Section 2(h) of the Act defines nuclear incident to mean any occurrences or series of occurrences having the same origin which causes nuclear damage but only with respect to preventive measures creates a grave and imminent threat of causing such damage. There is no specification as to the point at which a person or a private operator may determine the likelihood of grave and imminent threat of nuclear damage. The identifying signs for the operator situated in the area to realize the likelihood of grave and imminent threat of nuclear damage are not specified.

Similarly, Sections 2(l) defines the 'operator'. The definition of operator as in relation to a nuclear installation means the person designated by the Central Government as the operator of the installation. The definition does not specify whether or not private entities can be appointed as operators of nuclear installation. There are no guidelines or methods specified by the Central Government to designate an operator. The role, duty and functions of the operator are not specified. The ambiguity in defining an operator may be deliberate so as to keep options open for the entry of the private sector but the unrestricted and absolute power of the Central Government in this regard may leave scope for abuse of power.

Section 2(n) defines preventive measures which means any reasonable measures taken by a person after a nuclear incident has occurred to prevent minimize damage referred to in sub-clauses (i), (v), (vii) of Clause (f) subject to the approval of the Central Government. The phrase 'reasonable measures' used in the definition is vague as to what is considered to be reasonable and what is not.

Section 4(2) states that where more than one operator is liable for nuclear damage the liability of the

operators so involved shall be in so far as the damage attributable to each operator is not separable be joint and several provided that the total liability of such operator shall not exceed the extent of liability specified under sub-Section (2) of Section 6. In this regard, specification as to whether this clause pertains to one nuclear installation is required.

Section 8 provides that the operator must take an insurance of Rs 500 crore covering his liability. The lacuna lies in proviso to Subsection (2) of Section 4 which states that, when nuclear damage is caused by more than one operator the total liability of both the operators shall not exceed Rs.500 crore. Similarly, Section 5 (1)(i) states that an operator shall not be liable for any nuclear damage where such damage is caused by a nuclear incident directly due to (i) a grave natural disaster of an exceptional character. The lacuna here is that the said clause (i) of 5(i) is ambiguous which may enable an operator to take this ground to escape a liability.

Other unacceptable exceptions to liability include section 5(ii) which states that the operator shall not be liable for on site nuclear damage caused to the nuclear installation under construction or to any property in the nuclear site or damage caused to any means of transport. Precisely at what stage of the plants life the liability would the Bill become operational has not been made explicit. Would it be applicable for incidents that occur during the construction, storage and transportation stages?

Section 18 of the Bill specifies a period of 10 years for extinction of the right to claim. Although international conventions also provide for a 10 year limitation, whether 10 years is practical in the Indian context where legal process move at glacial pace is rightly being challenged. Though an increase from 10 to 20 years would be a step in the right direction the constraint would be whether the anticipated insurance mechanism too can be extended beyond 10 years.

Liability of the Central Government

Section 7 of the Bill states that the Central Government shall be liable to pay only in the

following circumstances—where the liability exceeds the amount of liability of an operator specified under sub-Section (ii)(6), to the extent such liability exceeds such liability of the operator, occurring in a nuclear installation owned by it occurring in account of causes specified in clause (i) and (ii) of sub-section one. This clause creates a distinction between the operator and the Government when both are the same in the Indian context.

Another ambiguity is whether no liability arises on a Public Sector operator and whether the Public Sector operator does not even have to opt for insurance cover as the Government is liable for nuclear installations it owns. Section 5 states that the operator is not liable for nuclear damage caused by armed conflict, hostility, civil war and terrorism. If the State is not capable of underwriting the physical security of a nuclear plant in the event of external threats, the question arises as to whether the State should own and operate nuclear plants in the first place?

Supplier Liability

Section 17 of the Bill provides the operator of a nuclear installation the right of resource when the right is expressly provided for in a contract in writing or when the incident has resulted from the wilful act or gross negligence on the part of the supplier or due to the commission or omission of a person. It is not clear whether the Atomic Energy Regulatory Board (AERB) would review foreign supplier designs or it will only review domestic designs? Again it is not clear whether foreign suppliers will permit the AERB to review its designs and even if they do, whether the AERB would have the necessary competence to carry out such a review. This becomes important from the light of the fact that the indigenous competence is primarily is with regard to Pressurised Heavy Water Reactors (PHWRs) and not Light Water Reactors (LWRs) that are likely to be imported. If the reactor is intrinsically flawed in design, engineering, construction, materials of construction etc, then even the most well equipped and well trained operator cannot prevent an accident.

One of the key objectives of having a liability Bill is to fix the responsibility on a single entity, whom in this case is the operator, so that the aggrieved has a single point for remedy. However this should not mean that the overseas supplier has no liability. Vicarious liability of the supplier must be in the form contractual liability between the operator and the supplier. Beyond this contractual liability, statutory liability is also necessary as contractual responsibilities tend to be skewed in favour technology owners. Moreover contractual liabilities between two commercial entities cannot be mediated by the Government which holds the ultimate responsibility to protect its citizens. Statutory liability for the supplier would necessarily mean the involvement of international insurance agencies as well as third party certification agencies and auditors which would be in the best interest of India's nuclear power industry. The suggestion to rework Section 7 so as to ensure that suppliers can be held responsible

by the operator for 'patent' or latent' defects in the equipment must be pursued with diligence.

If our legal history has taught us anything, it is that the lack of foresight over future disputes and contradictions arising from ambiguities and vagueness may defeat the whole purpose of legislation. The reason and intent behind the Bill is not only to deter the operators from being negligent with such perilous operations but to ensure that justice is delivered as swiftly as possible in the event of an accident.

Expert views expressed at the Roundtable on the Civil Liabilities for Nuclear Damages organised by the Observer Research Foundation on 13 July 2010 have been incorporated.

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