India: The Civil Liability for Nuclear Damage Bill 2010 – Some Tentative Observations

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The Run Up

The draft Bill which had been approved by the Union Cabinet on November 20 2009 [1] was eventually listed for tabling in the Lok Sabha on March 15 2010 [2], the penultimate day of the first half of the Budget Session of the Parliament, after a lapse of almost 4 months.

In fact, the Bill was in the offing for quite some time by then, since the successful clinching of the Indo-US Nuclear Deal, on October 10 2008 [3].

The Deal has, it may be pertinent to recall, opened up for India the doors to the global nuclear market, thereby making the tag ‘Indo-US’ somewhat of a misnomer in so far as the tag conveys the impression of strict bilaterality [4]. The market had remained out of bounds since the first (“peaceful”) nuclear explosion carried out by India way back on May 18 1974 with the plutonium obtained from the spent fuel rods of the nuclear reactor CIRUS supplied by Canada [5] to mentor India onto the path of developing capabilities to generate nuclear power (only) for “peaceful” purposes. The nuclear explosion, despite the disingenuous tag, “peaceful”, was looked upon by the rest of the world as a clear breach of faith, if not worse. The reactions were strong and almost instantaneous. India was, as a consequence, practically shooed out of the global nuclear market. With passage of time the barriers went further up and up. And, more so, after the second round of five blasts, on May 11 and 13 1998, declaring itself openly as a nuclear weapon power and attracting strong condemnations from the rest of the world [6]. Things became even tougher.

But if the US had earlier taken the lead to impose sanctions in response to Indian blasts, under George Bush, it took a unilateral initiative to radically reverse the situation in 2005. The contours of that move were duly captured in a joint statement issued on July 18 by George Bush and Manmohan Singh from Washington DC. After traversing a long and tortuous path marked by cajolements, mainly by India, and muscle flexing by the US, the international community was sort of coerced into accepting India back as a legitimate partner in (civilian) nuclear trade. The 45-member Nuclear Supplier Group (NSG) on September 6 2008 at the end of two rounds of stormy sessions granted a unique waiver to India, completely disregarding Pakistan’s shrill cry for a similar, and even-handed, treatment. The grand reward for the grossly aberrant India stood out in sharp contrast also with the harsh treatment being meted out to Iran, a signatory to the NPT, on the ground of its presumed

intention to develop nuclear weapons under the guise of working towards nuclear power despite repeated denials and access granted to IAEA inspections of its facilities [7].

This Bill is generally being looked upon as a continuum of that process, allegedly, in order to ensure a “level playing field” for the American enterprises – to let them have a significant share of the cake [8], the Indian nuclear market – a part payback for the American generosity bestowed upon India, for its very own reasons though. The move had, however, been first conceived by the then NDA government way back in 1999 [9].

When the US Secretary Of State, Hillary Clinton, visited India in July 2009 [10], there were talks of the Bill getting passed by the Indian Parliament. But nothing of that sort happened. Again in late November 2009, when Singh was to meet Obama in Washington DC [11], there was talk of getting the Bill enacted. Even then, it did not happen. The Union Cabinet had dutifully approved the Bill just on the eve of the visit though. With Manmohan Singh to visit the US to attend the Nuclear Security Summit, called by President Barack Obama, slated to be held on April 12-131 [12], the government was again trying to push it through. Never mind the considerable cooling off of Indo-US relations in the meanwhile as compared to the George Bush days [13].

It is of course quite another matter altogether that the Bill could not eventually be tabled on account of the shift in relationship of forces within the Parliament caused by the introduction, and its passage in the Upper House, of the much lauded and controversial Women’s reservation Bill [14]. And now, given the realignment of forces, whatever be the intentions of the government, no easy or early passage is on the cards. But that does in no way mitigate the salience of the Bill and its serious implications. In any case, Barack Obama is scheduled to visit India later this year [15]. So the pressure will persist.

The Bill

Since the Bill was approved by the Union Cabinet on November 20 2009, at least three significant changes have been made. One, the name has been changed from ‘The Civil Liability for Nuclear Damage Bill 2009’ to ‘The Civil Liability for Nuclear Damage Bill 2010’ [16]. Two, in clause 6. (2), the quantum of “liability of an operator for each nuclear incident” has been revised upwards from “rupees three hundred crores” to “rupees five hundred crores”. Three, a new “Chapter”, ‘Offences and Penalties’ with 4 clauses, has been added. Also, the Chapter IV, ‘Claims and Awards’, has been somewhat restructured and expanded.

The Bill, in the present form, is contained in 28 (26 + ii) pages. It has 7 Chapters constituted of 49 clauses and also ‘Statement of Objects and Reasons’ with ‘Notes on clauses’ following plus two memoranda.

The objective of the Bill as laid down in the extended subject line is:
“To provide for civil liability for nuclear damage, appointment of claims Commissioner, establishment of Nuclear Damage Claims Commission and for matters connected therewith or incidental there of”
Para 7 of the ‘Statement of Objects and Reasons’ further lays down that the purpose of the Bill is: *“to enact a legislation which provides for nuclear liability that might arise due to a nuclear incident and also the necessity of joining an appropriate international liability regime.”*

The “appropriate international liability regime” clearly refers to ‘Con [17], which is purportedly based on the earlier Paris and Vienna Conventions. India is as yet signatory to none of these Conventions [18].And the CSC is yet to come into force [19]. And, that being the case, India has got

to get a national law enacted so as to be able to declare that its national law complies with the provisions of the Annex to the subject Convention, before it is considered for membership of this Convention (i.e. CSC).

This Bill appears to be very much a move in that direction . It is, however, interesting to note while the CSC provides that "liability" of the "operator" is absolute, i.e. the operator is held "liable" irrespective of fault; the corresponding provision in the subject Bill, as contained in Clause 5 (Chapter II), is pretty much contrary to that. This Clause lists out the circumstances under which the "operator" will not be "liable" in case of an accident.

Regardless of justifiability or otherwise, the motivation for such a clear departure deserves to be properly explored.
"The range of implications of joining this Convention, the main purpose of which appears to make Supplementary Compensation available jointly by the member countries in case of a (catastrophic) accident over and above the "liability" limit of the "operator" and the concerned state [20] also need be thoroughly examined."

The author of the Bill is Prithviraj Chavan (Minister of State for Science and Technology and Earth Sciences).

The Bill, in pursuance of the objective as spelt out above, in the Clause 9 (Chapter III) provides:
"The Central Government shall, by notification, appoint one or more Claims Commissioners for such area, as may be specified in that notification, for the purpose of adjudicating upon claims for compensation in respect of nuclear damage."
The Chapter IV provides the details as regards 'Claims and Awards'.

The heart of the Bill is however, arguably, constituted of clause 5, 6 and 7 (Chapter II). The clause 6 gives out the limits of "liabilities", clause 7 spells out the "liability" of the Central Government and the clause 5 lists out the circumstances under which the "operator" shall not be "liable".

The Major Problems

The major problems are as under:

I. The Bill paves the path for private participation as "operator" of nuclear power plants in India.

One of the central elements of the Bill is to define the "liability", arising out of any nuclear accident, of an individual "operator" – independent of (and unaffiliated with) the Government of India.

Till now all nuclear establishments/ventures, including power plants, without any exception, are run by the state through affiliated bodies – the Uranium Corporation of India Limited (UCIL) for uranium mines and the Nuclear Power Corporation of India Limited (NPCIL) for the power plants.

Given that fact, this provision makes sense ***only*** in the context of an ***impending programme*** for participation of private players as "operators" of nuclear power plants.

In fact, the Clause 6. (2), inter alia, provides:
"The liability of an operator for each nuclear incident shall be rupees five hundred crores"

And, the Clause 7 (1), inter alia, provides:
"*The Central Government shall be liable for nuclear damage in respect of a nuclear incident.*

(a) where liability exceeds the amount of liability of an operator specified under sub-section of section 6;
(b) occurring in a nuclear installation owned by it"
Furthermore, the Clause 6. (1) provides:
“The maximum amount of liability in respect of each nuclear incident shall be the rupee equivalent of three hundred million Special Drawing Rights.”

Therefore in case of the power plants operated by the NPCIL, as is the case with all the plants as of now, the quantum of “liability” is “three hundred million Special Drawing Rights” or equal to the “maximum” (i.e. total) “liability”.

The much lower quantum of “rupees five hundred crores” will apply only in case of nuclear power plants **not** owned/operated by the NPCIL. As of now, there is neither any such plant nor has any such plan been announced.
But these provisions taken together are a clear pointer to that direction.

The nuclear industry is unique in character in terms of safety hazards. And a nuclear power plant is potentially catastrophic, as so chillingly demonstrated by the Chernobyl disaster on April 26 1986 [21], in particular. Given the fact that profit maximisation drive is the very raison detre of any private enterprise giving rise to the intrinsic and inevitable tendency to cut corners in the field of “safety”, **the envisaged ushering in of private players as “operators” of nuclear power plants is an open armed invitation to disaster**.

A regulatory body overseeing safety measures can at best mitigate this trend, not eliminate it by any stretch. And given the tremendous clout of the private operators in this field given the scale of investments required, the efficacy of any regulatory body, in any case, would be highly suspect.

Hence, this move calls for all out resistance.

And, the CSC does in no way obligate its members to open up their wombs to private “operators”.

II. A. The Bill proposes to limit the total “liability“(of the (private)”operator“plus the”state") regardless of the scale of the disaster.

This is just unacceptable.

II. B. On top of that, the total or “maximum” “liability“has been”capped“at”three hundred million Special Drawing Rights [SDR]". This works out to just around Rs. 2,100 crore and 450 million US$ [22].

In case of Bhopal Gas Disaster, the Supreme Court had approved a deal between the contending parties providing compensation to the victims amounting to US$ 470 million [23]. That was way back in 1989, more than two decades ago. Even at that time this was considered grossly inadequate.

So, while **whatever *cap* on “liability” is unacceptable; this cap on total “liability“or the”maximum amount of liability"**, as the draft Bill has put it, **is woefully paltry**. More so, given the fact that a catastrophic nuclear accident may very well dwarf the Bhopal Gas Disaster in terms of devastations.

In case of Chernobyl Disaster, while no precise estimate of total economic impact is available, as per one report, the total “spending [only] by [neighbouring] Belarus on Chernobyl between 1991 and 2003 was more than US $ 13 billion [24].

That’s incomparably larger as compared to the “maximum liability” pegged in the Bill – 450 million US $!

However, once India joins the CSC, and it comes into force, the cap on total “liability” would undergo significant change as additional compensation over and above 300 million SDR would become available. In fact the CSC also permits the concerned states to provide for further (“third tier”) [25] compensation, without any whatever “cap”, over and above the CSC limits. As long as the nuclear power plants in India obtain, joining the Convention may in fact turn out to be beneficial for the potential victims. But then the government must come clean on its plans, make specific commitment and explain the implications. The onus clearly lies with it.

III. The liability of an individual non-state (i.e. private) “operator” has been “capped” at a mere Rs. 500 crore. Less than one-fourth of the total or “maximum” liability.

And, the difference between the actual compensation to be paid and the “liability” of a private “operator” would be borne by the Indian government i.e. the Indian taxpayers/people.

So, while the very concept of *cap* is unacceptable and the total *cap* could very much turn out to be woefully inadequate; the cap on individual private "operator is abysmally low - less than one-fourth of the total *cap*.

It is evidently an attempt to brazenly favour a private “operator” at the cost of Indian masses.

The eminent jurist, and former Attorney General, Soli Sorabjee has argued in details [26].
“Any legislation that attempts to dilute the Polluter Pays and Precautionary Principle and imposes a cap on liability is likely to be struck down as it would be in blatant defiance of the Supreme Court judgments. Moreover, it would be against the interests and the cherished fundamental right to life of the people of India whose protection should be the primary concern of any civilised democratic government.”

Not only that, there is a further provision that this *cap* for an individual “operator” may be fixed lower or higher than the normative *cap* of Rs. 500 crore, but in no case lower than Rs. 100 crore. Quite significantly, while the cap of Rs. 300 crore, as had been understandably approved by the Union Cabinet, now stands revised upward to Rs. 500 crore; there is no corresponding revision of the floor level of Rs. 100 crore. So this “revision” in actual practice may turn out to be just a ploy, an act of deception.

It is not clear what stops the Indian government, or its designated agency, to peg such *caps*, while actually operating this provision “having regard to the extent of risk involved in a nuclear installation” – and no objective parameters whatever having been laid down, at the minimum of Rs. 100 crore, or thereabout?

In that case, the “cap” for the private “operator” becomes even less than one-twentieth of the total or “maximum” "*cap*. That’s just ridiculous.

It is also equally significant that while “the Central Government may, having regard to the extent of risk involved in a nuclear installation by notification, either increase or decrease the amount of liability of the operator”, there is no such corresponding provision for the “maximum [i.e. total] liability”. If the risk assessment of any particular “installation” makes it liable for adjusting the “liability” for the private “operator” it would be quite logical to adjust the “maximum [i.e. total] liability” for that “installation” in alignment with that. That nothing of that sort has been provided in the Bill clearly gives away the real intention behind. To lower down the “liability” of a private “operator” even much below the otherwise abysmally low amount of Rs. 500 crore – not even one-

fourth of the "maximum liability". That's evidently just a stratagem to deceive.

Furthermore, with passage of time, the Indian Rupee is expected to depreciate against the SDR. With the total or "maximum" cap having been defined in terms of SDR and the *cap* of individual private "operator" in terms of Indian Rupees, the proportion of the financial burden to be borne by a private "operator", in case of a catastrophic accident, would further go down! Here again, there is no apparent reason, other than to favour the private "operator", why in one case it is SDR and in the other case it is Indian Rupees.

Here it is pertinent to keep in mind that the CSC does not establish either a floor or a ceiling on the liability of the operator or require the concerned state to limit the liability of the "operator". It in no way makes it incumbent upon any member country to either bring in private "operator" or limit/cap its "liability" at a level lower than the "total liability" (of minimum 300 million SDR). [27].

The Situation in the US

In case of the US, in the event of an accident, the first $375 million is paid by the insurer(s) of the plant. It is mandatory to insure the plant.

Beyond that, up to US$ 10 billion is paid out of a fund jointly contributed by the "operators" as mandated by the Price-Anderson Nuclear Industries Indemnity Act.
Beyond that, the Federal Government pays [28].

The contrast is too stark.

Other Issues

The argument by some commentators that without this Bill being enacted, the American companies would be at a disadvantage appears to be somewhat confused and only partly true. The American vendors will conceivably be at no disadvantage as compared to their competitors as the vendors are routinely "indemnified for consequential damages". Even otherwise, the Bill does not prohibit the "operator" from making the equipment vendor "liable" on account of an "accident". That is between the "operator" and the "vendor". But as far as the victim is concerned, the "operator" will be "liable" subject to the applicable *cap*. From the (potential) victim's point of view, such single point responsibility should actually be welcome. That would conceivably cut down much of legal complications which may arise otherwise.

The US-based enterprises will, however, be at a distinct disadvantage as prospective "operators" in absence of a cap on their "liability".

The absence of any law whatever defining, and dealing with, "civil liability" in case of "nuclear damage", however, appears to be posing problems for the US vendors. But this difficulty may occur in case of vendors from other countries as well.

The mainstream, and also radical, critics, known to be otherwise knowledgeable, have rather pitiably missed the central point that the essential thrust of the Bill is to enact a law defining "civil liability" in case of "nuclear damage", in compliance of the CSC, and usher in private players as "operators" and peg their "liability" at ridiculously low levels, going much beyond the framework of the CSC [India-US Nuclear Deal Redux: Another Showdown by Radha Surya at http://www.zcommunications.org/india-us-nuclear-deal-redux-by-radha-surya, which refers also to various other eminent critics including Brahma Chellaney, a known nuclear hawk, and Gopal

Krishna, of the Toxics Watch Alliance (TWA), is an excellent illustrative case.]]. (To repeat, the CSC does not obligate a member state to open up its womb to private players nor does it compel the “liability” to be pegged at a level below SDR 300 million.)

The other point that has been raised is that the Bill “lets nuclear equipment suppliers and designers off the hook” [29]. This, however, appears to be fairly misconceived – at two distinct levels. One, the vendor, the designer or even the turn-key contractor is customarily indemnified (i.e. given immunity) from ***consequential damages*** (which include ***third party*** damages). That is the standard norm. Two, the Bill itself ***does not do anything*** to prohibit the plant owner/operator from incorporating suitable clause(s) in the contract with the vendor/designer/turn-key contractor to hold them liable for any damage caused to any third party arising out of their faults.

Much to the contrary, the Clause 17, inter alia, provides as under:
"*The operator of a nuclear installation shall have a right of resource where –*
(a) such right is expressly provided for in a contract in writing;
(b) the nuclear incident has resulted from the wilful act or gross negligence on the part of the supplier of the material, equipment or services, or of his employee;"
That evidently knocks the bottom out of the argument that the Bill “lets nuclear equipment suppliers and designers off the hook”.

It, however, holds the “operator” responsible vis-à-vis the victims of any accident. That is both logical as the accident would take place while the “operator” is “operating” the plant; and highly welcome from the potential victim’s point of view as this would eliminate likely complications in determining and pinpointing “responsibility” resulting in interminable delays in obtaining any succour.

The objections raised as regards the 10-year limit to “liability” [30], as provided in Clause 18 (Chapter IV), are quite valid. In case of exposure to low dose radiations, the injuries caused thereby – mostly in various forms of cancer, may take much longer time to manifest. But then it would be that much difficult to establish the causal link.

Conclusion

All in all, the Bill has got to be opposed on the following grounds:

I. The Bill paves the path for private participation as “operator” of nuclear power plants in India. That’s an open invitation to disaster.

II. A. The Bill proposes to limit the total “liability“(of the (private)”operator“plus the”state") regardless of the scale of the disaster. That’s just unacceptable.

II. B. On top of that, the total or “maximum” “liability“has been”capped“at”three hundred million Special Drawing Rights [SDR]". This is too paltry.

III. The liability of an individual non-state (i.e. private) “operator” has been “capped” at a mere Rs. 500 crore. Less than one-fourth of the total or “maximum” liability. And it has provisions to further lower this amount, and pretty steeply at that. This is a blatant negation of the Polluter Pays and Precautionary Principle clearly and assiduously laid down by the Indian Supreme Court.

The Bill, if not withdrawn outright, must be referred to the concerned Standing Committee after tabling in the Parliament and widespread, open and transparent public consultations

must follow thereafter to consider all the pros and cons, including the implications of joining the CSC, before taking any further step forward.

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Footnotes

[1] See: http://www.dailyindia.com/show/364588.php or http://www.kseboa.org/news/us-pressure-civil-nuclear-liability-bill-likely-in-parliament-session.html, for example.

[2] See: http://news.rediff.com/report/2010/mar/13/nuke-bill-to-be-tabled-in-rs.htm and http://www.business-standard.com/india/news/nuclear-bill-to-be-tabled-in-rsmarch-15-govt/388495/, for example. A significant point to note is that as late as on March 14, and 13, both these news items, from otherwise credible sources, are quoting the concerned Minister to the effect that the Bill would be tabled in the Rajya Sabha on March 15. While, in reality, it was to be tabled in the Lok Sabha. That shows the degree of non-transparency prevailing.

[3] See the Editorial, and other articles under the section, Indo-US Nuclear Deal, in the Peace Now, March 2009 at http://www.cndpindia.org/download.php?view.16 for an account of how the deal crossed its last hurdles. The news item at http://www.kseboa.org/news/us-pressure-civil-nuclear-liability-bill-likely-in-parliament-session.html explicitly links the Bill with the Deal thus: "The passage of a civil nuclear liability Bill is one of key steps in implementation of the India-US civil nuclear agreement." And, it is no unique. Here is another example: "The US has linked the completion of the Indo-US nuclear agreement to India's capping of nuclear liability and that is why the hasty move to introduce this in parliament." at http://indiacurrentaffairs.org/civil-nuclear-liability-bill-prefering-interests-of-us-companies-over-indian-people/. There is no specific provision in the Deal to this effect though. A rather well-informed article at http://www.american.com/archive/2010/march/india-the-united-states-and-high-tech-trade lists out 3 hurdles in full implementation of the "landmark U.S.-India Civil Nuclear Agreement—the crown jewel of the U.S.-India strategic partnership". One of the three hurdles listed is now essentially settled with finalisation of the reprocessing (of spent nuclear fuel) accord between the two countries, which, however, remains to be signed. See http://www.cndpindia.org/download.php?view.37 for the text of the finalised accord.

[4] See the Editorial in the *Peace Now*, February 2010 at http://www.cndpindia.org/download.php?list.13.

[5] India's first reactor, the 1 Megawatt (MWt) Aspara Research Reactor, was built with British assistance in 1955. The following year, India acquired a CIRUS 40 MWt heavy-water-moderated research reactor from Canada. The United States agreed to supply heavy water for the project. ... India commissioned a reprocessing facility at Trombay, which was used to separate out the plutonium produced by the CIRUS research reactor. This plutonium was used in India's first nuclear test on May 18, 1974, described by the Indian government as a "peaceful nuclear

explosion." Excerpted from India's Nuclear Program by Volha Charnysh at http://www.nuclearfiles.org/menu/key-issues/nuclear-weapons/issues/proliferation/india/charnysh_india_analysis.pdf. Also see Nuclear Power in India: Failed Past, Dubious Future by M. V. Ramana at www.npec-web.org/Essays/Ramana-NuclearPowerInIndia.pdf. This talks of India being largely cut off from the international nuclear market as a consequence.

[6] For world reactions to May 98 blasts, see http://www.fas.org/news/india/1998/05/wwwhma14.html. Also: http://www.wisconsinproject.org/countries/india/india-nuclear-miles.html.

[7] For a brief evaluation and the trajectory of the Deal (till early 2008), see http://www.europe-solidaire.org/spip.php?article10224. For a timeline, see p 7/8, *Peace Now*, Feb, 2010 at http://www.cndpindia.org/download.php?list.13.

[8] See http://indiacurrentaffairs.org/civil-nuclear-liability-bill-prefering-interests-of-us-companies-over-indian-people/, for example. The pleadings of Omer F Brown, a key spokesperson for the US nuclear industry, that India enacts a nuclear liability law, as referred to above, has further validated this position.

[9] See: http://www.business-standard.com/india/news//govt-open-to-raising-nuclear-liability-cap//388512/, for a very concise history of the move towards enacting a nuclear liability cap bill, locating the first move way back in 1999, and an explication of the government's point of view.

[10] See http://www.america.gov/st/texttrans-english/2009/July/20090720161943xjsnommis0.2136499.html.

[11] See: http://news.bbc.co.uk/2/hi/business/8374050.stm.

[12] See: http://www.deccanchronicle.com/national/pm-may-visit-us-april-n-summit-158.

[13] See the Abstract at http://acdis.illinois.edu/newsarchive/newsitem-indiausrelationsfrombushtoobamanewchallenges.html, for example. Also http://pragmatic.nationalinterest.in/2010/03/24/understanding-indo-us-relationship/.

[14] See: http://www.hindustantimes.com/india/Nuclear-liability-bill-not-to-be-tabled-in-Lok-Sabha-today/519134/H1-Article1-519210.aspx, for example. The news item also reported that: "Government sources say that Prime Minister Manmohan Singh is keen to get the bill passed in parliament ahead of his US visit in April." Also see http://www.dailyindia.com/show/363428.php.

[15] See; http://www.hindustantimes.com/News-Feed/americas/Obama-to-visit-India-later-this-year/Article1-518487.aspx.

[16] See the revised Bill at http://www.cndpindia.org/download.php?view.36 and compare with the description of the earlier version given in Nuclear Liability Law in Developing Countries - Indian Case by B. B. Singh at

http://www.cndpindia.org/e107_plugins/content/content.php?content.65.

[17] See: http://www.iaea.org/Publications/Documents/Conventions/supcomp.htmll.

[18] See B B Singh, op cit.

[19] See A flawed Bill by Praful Bidwai at http://www.flonnet.com/stories/20100409270709500.htm. It provides: since it was opened for signature in 1977[read 1997], the CSC has only been signed by 13 states and ratified by only four countries (Argentina, Morocco, Romania and the U.S.) – in place of the minimum of five countries needed for its entry-into-force.
The relevant provision, Article XX. 1, reads: This Convention shall come into force on the ninetieth day following the date on which at least 5 States with a minimum of 400,000 units of installed nuclear capacity have deposited an instrument referred to in Article XVIII.

[20] See The Convention on Supplementary Compensation for Nuclear Damage: Catalyst for a Global Nuclear Liability Regime by Ben McRae at http://www.nea.fr/law/nlb/nlb-79/017-035%20-%20Article%20Ben%20McRae.pdf for detailed explanations.

[21] For a quite conservative, but exhaustive, estimates of the impacts of the disaster, see Chernobyl's Legacy: Health, Environmental and Socio-economic Impacts and Recommendations to the Governments of Belarus, the Russian Federation and Ukraine by The Chernobyl Forum at http://www.iaea.org/Publications/Booklets/Chernobyl/chernobyl.pdf. For an alternative assessment by the Greenpeace, look up http://archive.greenpeace.org/comms/nukes/chernob/read25.html.

[22] The exchange rate on March 25 2010 stands at 0.6603090000 SDR per US$, at http://www.imf.org/external/np/fin/data/rms_five.aspx. And, SDR 0.0144709000 per Indian Rupee.

[23] A news item at http://beta.thehindu.com/news/national/article53103.ece provides: According to an agreement on February 15, 1989 facilitated by the Supreme Court, the Union Carbide Corporation, U.S. provided a compensation of $ 470 million (Rs. 715 crore)...

[24] See: http://www.greenfacts.org/en/chernobyl/l-3/5-social-economic-impacts.htm#1p0. The comparable estimate reported by the Greenpeace, at http://archive.greenpeace.org/comms/nukes/chernob/read25.html, is:
The Belarus Government estimate the total economic damage caused between 1986-2015 would be (1992 June prices) $235 billion. In Ukraine, in 1995 the Ministry for Chernobyl needed 286.4 thousand billions of karbovanets ($2.3 billion), but received only one third of this. It is therefore possible to estimate that the total bill for those countries most effected will exceed $300 billion by 2015.

[25] Ben McRae, op cit.

[26] See: http://beta.thehindu.com/opinion/lead/article64688.ece?homepage=true.

[27] Ben McRae, *op cit*..

[28] See: http://en.wikipedia.org/wiki/Price%E2%80%93Anderson_Nuclear_Industries_Indemnity_Act .

[29] The bill lets nuclear equipment suppliers and designers off the hook. Excerpted from The great nuclear folly by Praful Bidwai at http://www.thedailystar.net/newDesign/news-details.php?nid=130882. The oft repeated references made to the Bhopal Gas Disaster and the “liability” of the Union Carbide therein is plainly misleading. The Union Carbide was the owner/operator of the plant. Apparently, no one at any stage even as much talked of holding the (yet unheard of) vendors of equipment(s) or designer of the plant responsible or “liable”. Siddharth Varadarajan, even while noting the provisions of the Right to Recourse has rather curiously refused to acknowledge the implications in a forthright manner. Ref. http://svaradarajan.blogspot.com/2010/03/nuclear-liability-law-has-sting-in-tail.html.

[30] Equally obnoxious is the 10-year limit to liability: many forms of radiation injury, including cancer and genetic damage, reveal themselves only 20 years after exposure. See Bidwai, ibid.