A COMPARATIVE STUDY OF NUCLEAR LIABILITY REGIMES IN US, CANADA AND INDIA

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Abstract

International Nuclear Liability Principles set standards for suitable compensation mechanisms that reduce further cross-litigation actions and recognizes mandatory insurance coverage. The Nuclear liability regime, while moving away from the conventional tort law mechanism, started conflicting with the constitutional principles of the land. While the 'Civil Liabilities for Nuclear Damages Act 2010' in India was much debated in the Parliament and outside, to many it appeared to go against traditional international nuclear liability principles. Similarly, in the case of US and Canada, the nuclear liability legislations respectively were contested to be limiting the liability of the wrongdoer, thereby violating the 'right to life' of citizens. However, it is worthwhile to realize that these jurisdictions have tried to expand their interpretation of nuclear liability principles and apply the same in their domestic legislations. The article describes the international nuclear liability principles along with its application in the Indian context. This article goes on to critically analyze the loopholes in the Indian Nuclear liability regime by comparing it with the US and Canadian framework, with the help of judicial interpretations.

Keywords: International Nuclear Liability Principles, Right to life, Insurance coverage, civil liability.

INTRODUCTION

The International Nuclear Liability regime evolved as a replacement for the traditional tort law system to provide a sound, safe and prompt compensation mechanism. Although India signed its first international convention much later than other countries, the 'Civil Liability for Nuclear Damages Act 2010' (CLND Act) is considered a significant step towards ensuring strict liability regime for nuclear damages. Considering that nuclear liability through tort law existed for about 40 years before the CLND Act could be enacted, the Act was seen as means to further collaborate and integrate with the global community. Along with that, the Act brings in the certainty of compensation, unlike the tort law system where one needs to seek judicial recourse.

In the *Bhopal Gas Tragedy case*[1], the SC applied tort law principles to decide on the issue of 'Right to life'. The principle of 'strict liability' was used in the famous *Ryland vs. Fletcher* case[2], which was found inadequate by the Indian courts, replaced it with the 'absolute liability' principle in the *Oleum Gas Leak Case*[3]. The court ruled "any enterprise engaged in an inherently dangerous

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[1] *Union Carbide Corporation v. Union of India*, 1989 SCC (2) 540.
[2] (1986) LR 3 HL 330.
[3] *M.C. Mehta v. Union of India*, 1987 SCR (1) 819.

activity should be `absolutely' liable to compensate the victims in an event of an industrial accident", setting precedent to the *Indian Council for Enviro Legal Action*[4].

In India, the victims have no statutory right to sue the supplier or the designer, but only the operator even if he is not the actual wrongdoer. Under S.3 of the 'Atomic Energy Act 1962', commercial nuclear energy can be produced only by the Central Government or Government Companies, and accordingly, the Nuclear Power Corporation of India (NPCIL) has been vested with the same responsibility[5], which is the sole operator that can be sued for nuclear accidents. The Standing Committee on Science and Technology, Environment and Forests, leaned towards the Atomic Energy Act and said that the 'operator' can only be a nuclear installation that has been set up by the Government, or a corporation that has been established by the government. The Committee emphasized the fact that there will be no inclusion of private enterprises as far as nuclear energy production in India is concerned[6].

In the wake of India's growing energy requirements, there was a need to operationalize the already existing agreements that were entered into with several countries for the "peaceful use of nuclear energy". For this reason, India enacted the CLND Act for bringing its civil liability regime in conformity with international principles thus replacing the traditional tort law-based liabilities. Various provisions of the Act have been constitutionally contested, which is also seen in the case of the US and Canada on similar provisions of their nuclear liability legislations respectively.

The CLND Bill 2010 was placed in the parliament[7]in 2010 and for the purpose of detailed examination of the Bill; it was referred to the Standing Committee, which submitted the report in August 2010[8]. With the President's assent to the Bill, the CLND Act came into force in November 2011. After the CLND Act, the CLND Rules were framed and brought about in 2011,some of the important provisions of it being insurance, reporting of a nuclear incident, *locus standi* of victims for compensation, operator's right of recourse, and adjudication of claims[9]. According to the Rules, the only person who has sustained injuries directly because of the nuclear accidents, the owner of

[4]*Indian Council of Enviro-Legal Action v. Union of India*, AIR 1996 SC 1466.
[5] Atomic Energy Act, 1952 S. 3.
[6] The Standing Committee on Science and Technology, 212th Report on Civil Liability for Nuclear Damage Bill, (2010).
[7] Robert J. Gruendel and Els Reynaers Kini, *Through the looking glass: placing India's new civil liability regime for nuclear damage in context*, 89 Nuclear Law Bulletin, OECD (2012)
[8] *Id.*
[9] Ram Mohan M.P, *Nuclear liability law of India: an appraisal of the extent of liability, right of recourse and trans-boundary applicability*, XVII (1) Journal of Risk Research 115 (2014).

the property where the disaster happened and the damage has occurred, the representatives of the deceased, and an agent duly authorized by the above can file a claim for compensation[10].

The 'Price-Anderson Act 1957' in the United States of America, was an aftermath of deliberations on the need for the development of nuclear energy as well as addressing the threat caused by unlimited liability[11].The pressing issue of compensating the victims and paying their claims after a catastrophic nuclear incident was also addressed through the Price-Anderson Act. The Act has been revised periodically since its enactment, which in practice seems to be happening once in ten years.

The US's Price-Anderson Act initially had a 'divided insurance-based' compensation mechanism, between the private operator on one side and a government scheme on the other, which included public funds[12]. Eventually, through the Nuclear Regulatory Commission (NRC), the sole responsibility of declaring an 'Extra Ordinary Occurrence' was vested upon it. This curbed the operators from defending themselves through Tort Law, which indicates that after a nuclear incident, the operator's liability is 'strict.'[13] Thereafter in 1975, the Congress envisioned on government's role in indemnifying and the need for a shift of burden towards the operator, thus phasing out the public funds mechanism[14]. This is when the concept of 'deferred premium' came into existence, which was further strengthened in 1982. The compensation scheme was funded completely by the private entities that are American nuclear operators licensed by the NRC. The NRC was also given the power to determine the premium amount. The *Three Mile Island Case* is a successful example of the application of the 'deferred payment' based liability mechanism[15].

The Nuclear Liability Act in Canada is modeled in accordance to the Vienna Convention 1963.[16] Enacted in the year 1976, the establishment of liability on the operator here is somewhat circuitous. Under the Nuclear Liability Act, the Nuclear operator is 'absolutely liable' if he breaches his duty and the claimant's duties are only to show that the damage caused is due to the

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[10] Civil Liabilities for Nuclear Damages Rules 2011, Rule 6.
[11] Jeffrey C Dobbins, *Promise, Peril and Procedure: The Price – Anderson Nuclear Liability Act*, 70 Hastings Law J. 331 (2019).
[12] *Id*.
[13] Michael Faure, *Compensating Nuclear Damage*: *A Comparative Economic Analyses of the US and International Liability Schemes*, 33 Maastrricht University 219 (2008)
[14] Price-Anderson Amendments Act 1988, 100 Public Law 408 (1988) (USA).
[15]*The Price Anderson Act*, AMERICAN NUCLEAR SOCIETY, (2015) *available at:* https://ans.org/pi/ps/docs/ps54-bi.pdf. (last visited on 15, Oct.2022)
[16]Regulatory and Institutional Framework for Nuclear Activities NUCLEAR LEGISLATIONS IN OECD AND NEA COUNTRIES, 9 (2009), *available at* https://www.oecd-nea.org/law/legislation/canada.pdf *(*last visited 15 Oct. 2022*).*

operator's breach of duty and establish the amount of compensation.[17] The NLA also envisages on the exclusivity of liability, that even if the supplier or the contractor were at fault the operator would be exclusively liable. The liability amount was restricted to $750 million, which turned out to be a matter of policy issue as no other provision provides for an increase in the liability amount periodically by way of amendments.[18] However, no efforts were taken to amend the same and hence the issue was constitutionally challenged. But the Ontario Court of Appeal dismissed the claim.

The Canadian Government felt the need for further improvement in the liability and risk assessment mechanism and balancing them amongst the operators, contractors and the suppliers. Harmonization and efficient compensation systems led to the new Nuclear Liability Compensation Act. While the Act was enacted in 2015, it came into force in 2017 bringing in an altogether different quantum of compensation amount[19]. Replacing the NLA, the Nuclear Liability Compensation Act has increased the liability amount from $750 million in 2017 to $1 billion in 2020[20]. The amendment of the amount periodically is seen to be the key significance of the new legislation.

The paper discusses the principles of International nuclear liability law established through International Conventions and how it has been applied under the Indian, US and Canadian regimes. The regime in US and Canada are compared with that of India mainly because all three countries follow the common law system. Secondly, US and India have already been tied together through the 'Civil Nuclear Energy Cooperation' that concluded in 2008, the only post which India saw its first nuclear liability regime; US and Canada being the major supplier nations[21]. While India and U.S have included supplier's liability in their domestic laws, Canada does not envisage supplier's liability in its regime but public interest has been demanding the inclusion, thereby going against its constitutional principles. These aspects are comparatively analyzed, looking into the provisions of their respective domestic legislations and judicial decisions that have a similar cause of action in all three jurisdictions.

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[17]Stanley D. Berger, CANADA'S NEW NUCLEAR LIABILITY AND COMPENSATION ACT (2016).
[18] *Id.*
[19] Julia A. Schwartz, *International Nuclear Third Party liability: The Response to Chernobyl,* Semantic Scholar OECD (2006) *available at* International Nuclear Third Party Liability Law: The Response to Chernobyl (grocjusz.edu.pl) (last visited on 15 Oct, 2022).
[20]*Supra note* 16.
[21]DAE. 2005. Cooperation Agreement Between India and USA on Peaceful Uses of Nuclear Energy." DAE. http://www.dae.gov.in/indous.pdf.

NUCLEAR LIABILITY LAWS IN INDIA, CANADA AND US: A BRIEF OVERVIEW

India brought about its first nuclear liability law, the Civil Liability for Nuclear Damages Act (CLNDA) in the year 2010[22]. The CLNDA was enacted to offer immediate compensatory damages for a nuclear accident through a no-fault liability framework routing the liability to the operator. Regarding liability, Section 17(b) of the Act provides for a recourse mechanism of the operator against the supplier[23]. Similarly, Section 46 deals with additional liability covered under laws other than the CLNDA. Hence, the issue is that the CLNDA also provides for the supplier being liable under other laws, which is in derogation of the CSC that provides for 'legal channeling'[24]. The US has excluded itself from this type of channeling and advocates 'economic channeling'.

The Price Anderson Act in the US is a comprehensive nuclear liability law that was enacted in 1957 to address the issue of liability post-nuclear accidents[25]. The main objective of the Act is to accumulate large funds that could help in an immediate and systematic method of compensation to the victims. Through 'economic channeling', the US holds the suppliers and designers liable in case they are the wrongdoers i.e. the U.S does not exclude tort law liability apart from the liability under the Price-Anderson Act and victims can bring a suit against both the operator and supplier separately. Hence the insurance pool covers not only funds for third-party liability but also the amount that is used to indemnify the suppliers. All licensees intending to operate nuclear power stations must present documentation that they have both the primary and supplementary insurance coverage required by the Price-Anderson Act, according to the Nuclear Regulatory Commission (NRC)[26]. American Nuclear Insurers (ANI) provides licensees with the primary third-party liability insurance, as well as handling the secondary insurance plans[27].

Canada enacted its first nuclear liability law, the Nuclear Liability Act in the early 1970s,

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[22] Manohar Parrikar Institute of Defense Studies and Analyses, *A Primer on the Indian Civil Liability for Nuclear Damage Act,* 2014 *available at* https://idsa.in/backgrounder/IndianCivilLiabilityt_gbalachandran_240914 (last visited on 15, Oct, 2022).

[23] PILLSBURY *available at* india-takes-the-next-step-in-forming-its-nuclear-liability.pdf (pillsburylaw.com) (last visited on 15, Oct.2022).

[24] *Id.*

[25] *Supra note* 15.

[26]WORLD NUCLEAR ASSOCIATION *available at* https://world-nuclear.org/information-library/safety-and-security/safety-of-plants/liability-for-nuclear-damage.aspx (last visited on March 2021).

[27] *Id.*

which was replaced by the Nuclear Liability and Compensation Act in 2017[28]. In the event of a nuclear accident, with regard to civil damages, the operator of the power plant is liable to pay a compensation of up to Canadian $1 billion[29]. The constitutionality of the earlier Act was subjected to judicial review, based on the provisions of the Charter of Rights and Freedoms that guarantee fundamental rights to the citizens of Canada. Interestingly, Canada has not extended its liability to the suppliers like the US or India. The law in Canada demands operators to be insured with approved insurers, as well as hold alternate financial security. In India, the insurance coverage with a cap of Rs. 1500 Crore has been made a part of the Nuclear Insurance Pool, through the General Insurance Corporation of India and other Indian-based insurance companies[30].

The Atomic Energy Regulatory Board (AERB) in India was established in 1983 under the Atomic Energy Act of 1962, which acts as a regulatory body to oversee the safety functions of nuclear power plants including framing of safety policies, safety codes, and ensuring compliance requirements. Etc.[31]. In Canada, these regulatory functions are performed by a government agency called, the Canadian Nuclear Safety Commission (CNSC)[32].

PRINCIPLES OF INTERNATIONAL NUCLEAR LIABILITY LAW AND COMPARATIVE ANALYSES

Addressing community concerns and providing them the adequate compensation and damages in case of a nuclear disaster or accident was the primary intention of the governments. The focus gradually started shifting toward the potential investors, owners and builders during the second half of the 21st Century. Due to conflicting interests, it was criticized that the traditional Tort law did not prevent the problems but raised other constitutional and interpretational issues amongst the global community. Therefore, there was a need for a liability regime through basic principles to compensate third parties[33].

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[28] The Nuclear Liability and Compensation Act, 1950 (Canada).
[29] Nuclear Liability and Compensation Act, 1950 S. 24(d) (Canada).
[30] Department of Atomic Energy, NUCLEAR INSURANCE POOL, (2019) *available at* https://pib.gov.in/PressReleasePage.aspx?PRID=1578152 (last visited on 15 Oct, 2022).
[31] Atomic Energy Regulatory Board , GOVERNMENT OF INDIA, https://aerb.gov.in/english/about-us
[32] *Supra note 28*.
[33] World Nuclear Association, *Liability for Nuclear Damage*, *available at* https://www.world-nuclear.org/information-library/safety-and-security/safety-of-plants/liability-for-nuclear-damage.aspx (last visited 15, Oct,2022).

Third parties may be entities that are not connected to the nuclear installation for supply of nuclear materials, goods and services, and technology[34]. There are five main principles about third party nuclear compensation and liability that form a part of both National and International regimes. Most of the countries around the world that have industrially progressed have imbibed these principles in their domestic nuclear liability legislations. This broad section discusses the dimensions of certain issues on the aspect of liability that were constitutionally challenged and deliberated upon conceptually, while comparatively analyzing the legislative status and judicial reasoning, of India, the United States and Canada.

1. Strict Liability and Limitation of amount

The Principle of Strict Liability has been adopted by all three jurisdictions in their domestic laws. Post a nuclear accident, the operator of the plant is strictly liable to the third party for the damage resulting out of the accident as it reduces the burden on the claimant to prove that the other party was negligent, or was at fault[35]. This principle provides for equity in larger measure, as the victims would be unable to find out who exactly was at fault. Like in the case of India, in some countries, it is also known as 'absolute liability'[36], which is an expanded interpretation of strict liability[37]. Hence, In terms of nuclear accidents, the jurisprudence being liability has evolved in such as a manner that strict liability does not exist anymore and operators can only be held 'absolutely liable'. In other words, both strict and absolute liability means the same.

The Vienna and the Paris Convention and the CSC establish concepts of limited liability in response to which states that are signatories, have framed their domestic legislations[38]. In states where the amount is higher than a limit that could not practically be borne by the operator, the operator and the government share the responsibility of compensating the claimants. For instance, India and the US follow a limited operator liability mechanism, and if the compensation exceeds the statutory limit, the governments take charge of paying the rest. S. 4(4) of the CLND Act states that the liability of the operator is based on 'strict liability' and 'no fault' principles[39]. This provision has to be read with S. 6(2) which restricts the maximum liability to 1500 crore; which was increased from 500 crores based on the Standing Committee recommendations, which obviates the

[34] *Supra, note* 19.
[35] *Id.*
[36] The Principle states that the defendant would be liable for the damage caused without considering the exceptions to the strict liability rule.
[37] *Supra, note* 26.
[38] *Supra, note* 19.
[39] Civil Liabilities for Nuclear Damages Act 2012, S 4 (4) (Canada).

fact that the liability is limited in the amount which is also a principle of International Nuclear Liability[40]. The argument here is that the said S. 4(2) limits the liability of every operator when compared to S.6 of the Act which is contrary to the 'strict liability' principle established in *M.C. Mehta vs. Union of India (AIR 1987 SC 1086).*

The proviso to S.4 (2) of the CLND Act envisages that, in the case of more than one operator, the total liability can be clubbed together, in so far as to the individual liability does not exceed the highest extent of liability[41]; and the clubbed liability need not exceed the liability fixed for a single operator, which violates the Right to livelihood guaranteed under Part III of the Indian Constitution[42].

On similar lines, the Ontario Court of Justice in Canada pronounced that the NLA did not violate Canada's Charter of Rights and Freedoms when the claimants argued that there was no assurance that the Federal Government would actually pay any amount beyond the statutory limit mentioned. There existed no evidence that the appellants incurred any current damage or loss that can be compensated[43]. The purpose was only to limit the likelihood of potential nuclear accidents in the future and to ensure compensation, if any occurs. Energy Probe was unable to establish that any wrong or injury had actually occurred[44]. Hence, the Court's reasoning inclined towards 'cause of action', which was not reasonable in this case, thus upholding the liability amount of $750 million as mentioned in the Act[45].

In *Carolina Environmental Study Group v. AEC (431 F. Supp. 203, 222 (W.D.N.C.),* a group of citizens brought a suit challenging and seeking a declaration that Price-Anderson's Act was unconstitutional because limitation of liability was against the "due process and equal protection of the laws", under the Fifth Amendment. It was held that the amount of the limitation does not reasonably relate to the impending damages that would be caused and are against the safety of citizens.

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[40] *Supra, note* 6.
[41] Civil Liabilities for Nuclear Damages Act 2012, S 4(2) (Canada).
[42] INDIAN CONST. Art 21.
[43] Dave McCauley & Jacques Hénault, *Strengthening Canada's Nuclear Liability regime*, GOVERNMENT OF CANADA *available at* http://www.nuclearsafety.gc.ca/eng/pdfs/acts-andregulations/strengthening-nuclear-liability-regime-eng.pdf (last visited on 15 Oct. 2022)
[44] *Id.*
[45] *Energy Probe et al. v. Attorney-General of Canada*, [1989] O.J. No. 537.

When the decision was appealed in *The Duke Power Company*[46], the decision turned out to be a landmark judgment in the US, where the notion of limited liability under S. 2210 (e) of the Price Anderson Act was challenged[47]. The claimants argued that they were deprived of recovering their losses which invariably violates the Fifth Amendment due process rights, and that the quantum of losses was irrational and did not cover the potential losses[48]. It was contended that the abolishment of state tort law led to disproportionate remedies. However, the Court of Appeal turned down the claim justifying that the limitation amount is not irrational and that $560 million is a just figure fixed by Congress. Therefore, both in the US and Canada, the reason behind fixing a maximum limit of liability was not clarified by the courts. Moreover, a cap on the liability amount goes against the idea behind holding the operators 'absolutely' liable.

2. Right of recourse as an exception to tort law

It would be unjustified if the burden to file claims is based on tort law wherein the victims need to establish negligence on the defendant, which ensures a lengthy litigation process. Thus evolved the principle of legal channeling. The principle places the onus of liability on the operator, notwithstanding whose "act or omission of the act" is actually the reason for the cause of the accident. The operator will be exclusively liable and the burden of paying compensation is channeled to him/her. The liability extends even during the time of transportation of nuclear substances[49]. While Canada and India applied and effectuated this principle in the CLND Act and the NLA respectively, the Price Anderson Act deviates to a concept called 'Economic Channeling' for which the US has been claimed as an exception through a 'grandfather clause' in the CSC[50].

The operator's liability in case of nuclear accidents, the suppliers or the designers are held liable for reasons such as improper fixing of machinery or defective reactors, who generally escape from the responsibility as regards to the compensation. 'Legal Channeling' is the term used in nuclear law that holds the operator liable. The operator is any company, government or private entity that is recognized by the state and has been vested with the authority to run a nuclear facility

[46] *Duke Power Company v. Carolina Environmental Study Group*, 438 US 58 (1978)
[47] John H Dickerson, *Limited Liability for Nuclear Accidents: Duke Power Company v. Environmental Study Group, Inc*., 8 (1) ECOLOGY LAW QUARTERLY, 163-185 (1979).
[48] U.S. Constitution. Amendment V.
[49] *Id*.
[50] M P Ram Mohan, & Els Reynaers, *Right of Recourse Claims Based on Latent Defects in the Nuclear Energy Sector in India: Brace Yourself for Fact-Intensive Disputes*, 15 UNIVERSITY OF PENNSYLVANIA ASIAN LAW REVIEW 284 (2020).

in the country. So only that company is held legally responsible for the damage caused and no victim can initiate a compensation proceeding against the supplier, constructor, designer or any other stakeholder, which is a common principle in Tort Law and all the International covenants apply the same principle. The CSC explicitly states that only the operator shall bear all the financial costs of liability from a nuclear incident unless there exists a contact to the contrary[51].

As an exception to the CSC, India has inserted the concept of 'right of recourse' of the operator under S.17 of the CLND Act. The provision says that the operator of a nuclear installation shall have the right to recourse against the supplier, after paying the compensation for the damages caused due to the nuclear incident[52]. This section has to be read with Rule 24 of the Civil Liabilities to Nuclear Damages Rules 2011 in case a provision for right to recourse is expressly mentioned in the contract, which further limits the liability of the suppliers and designers[53]; the license period or the product liability period, whichever is longer with respect to time and the operator's liability or the price mentioned in the contract, whichever is lesser with respect to the liability amount. If there is additional civil or criminal wrong, then the suppliers are liable for those acts along with the liability under CLND Act.

The US deviates from 'legal channeling' but follows 'economic channeling' as far as recourse mechanism is concerned[54]. Although it could be argued that the US has also deviated from the CSC. The CSC invoked a tailor-made 'grandfather clause' to exempt the US from following the principle of legal channeling. A grandfather clause exempts those that are already involved in a way of business activity from a newly formulated legal regulation, taking into note that the US has been following economic channeling from the 1950s[55]. The principle states that the burden of financial liability is on the operator because of the channeling but the operator in turn has recourse from the supplier and designers. It is difficult to understand the clear-cut difference between the principle followed in India and the US. It is seen that both principles share the same meaning and procedure. Hence, it is unsure as to why the US has deviated from the principle of 'legal channeling' that India

[51] IAEA, Convention on Supplementary Compensation for Nuclear Damage Online Calculator, *available at* https://www.iaea.org/publications/documents/treaties/convention-supplementary-compensation-nuclear-damage/online-calculator (last visted on 15 Oct, 2022).
[52] Civil Liabilities for Nuclear Damages Act 2012, S 2, S 17.
[53] Civil Liabilities for Nuclear Damages Rules 2011, Rule 24.
[54] Michael G. Faure & Tom Vanden Borre, Compensating Nuclear Damage: a Comparative Economic Analysis of the U.S. and International Liability Schemes, 33 WM. & MARY ENVTL. L & POL'Y REV 219 (2008).
[55] *Supra, note* 50.

follows. On the other hand, it is also unknown as to why India does not follow the principle of 'economic channeling' while both the jurisdiction implement this through an umbrella insurance/insurance pool. However, to reject the argument that India violates the obligation that it ought to follow through CSC, it can be said that India is just a party signed to CSC not having ratified the convention so far.

Unlike the US and India, Canadian law limits the right of recourse of the operator only to individuals who intentionally cause an act or omission of an act that leads to a nuclear incident[56]. Canada did not choose to follow the exception as broad as the other two countries even in the new legislation, and to an extent strictly follows the principle of 'legal channeling'. Though the CSC Annex provides for the right of recourse against a third party through a formal contract, the Canadian framework excludes this right against any supplier or contractor even when the act was done through gross negligence. If an individual intentionally causes the incident, the operator's right of recourse would be limited only against the individual who actually committed the wrong and not his/her employer[57]. Hence, it is evident that Canada seems to be following the traditional liability system of Tort law as far as the recourse is concerned. This has however not been challenged as a constitutional violation in Canada. The NLCA provides for 'Subrogation' under S.76, in case the Minister or the Contracting party (other than Canada) contributes to the public funds, the Attorney General and the Contracting state may exercise their right of recourse, respectively[58]. This right is considered to be in accordance with that of recourse of the operator provided for under S.13 of the Act.

In India, the provision for 'right to recourse' under S.17 of the CLND Act has been constitutionally challenged in *Centre for Public Interest Litigation & Ors. v. Union of India*[59]. It was argued that the amount of liability on the supplier and designer that the operator could exercise his right to recourse on is capped and limited. This causes a grave hazard in operating the power plant and clearly violates the 'absolute liability' principle. Moreover, the S.17 (a) vests the right to recourse on the operator if there is an express contract on the same[60]. This raises a question as to if the right to recourse cannot be exercised if there exists no formal contract. In that case, the 'polluter

[56] Stanley D. Berger, Canada's New Nuclear Liability and Compensation Act, XXII NUCLEAR INTER JURA, PROCEEDINGS OF THE CONGRESS, Nuclear Law Association, India (2016).
[57] *Id.*
[58] The Nuclear Liability Compensation Act 2017, S 76.
[59] (Writ Petition (Civil) No. 407 of 2012.
[60] Civil Liabilities for Nuclear Damages Act 2010, S 17 (b) (India).

pay principle' is violated and the operator has to bear the costs even though it was the fault of the supplier that caused the nuclear accident. The liability of the supplier is also limited to time as mentioned under S.17 (b), which also violates the constitution as well as the principles established by the Supreme Court[61]. The Parliamentary Standing Committee also recommended that there needs to be an amendment of this provision in lines of the 'product liability period' wherein a clear cut liability has to be established on the supplier for the faulty design or manufacture of equipment and machineries[62].

3. Limitation in time vis-à-vis 'Right to life'

Application of absolute liability principle ensures that claimants are brought back to their original setting and this is done through insurance pools. Private insurance has established that there needs to be a fixed time limit beyond which the claimants cannot be compensated i.e. time limit is set within which the claim for insurance has to be established.[63] In most jurisdictions, it is fixed at 10 years. The recommendation of the Standing Committee for an increase in the time limit from 10 to 20 years was considered and the same was validated through the CLND Act[64]. Both US and Canada have set its limit to 10 years.[65]

The principles of Nuclear Liability Law are the foundations to various International Conventions pertaining to nuclear liability. Contracting parties to these conventions apply these principles in order to hold the liable party accountable, thus focusing towards fulfilling the objectives. The Vienna and the Paris Convention are the first set of Conventions to apply these principles, which were eventually reiterated in CSC;[66] all those that act as a basis for nuclear liability and compensation.

India, US and Canada have recognized this in their domestic laws, however it was challenged as subjected to Constitutional violation of "Right to life and liberty". The CLND Bill initially prescribed 10 years as the limitation period for claiming damages, which then became 20 years, based on the Standing Committee's recommendations. It is rational to compute the damages

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[61] Bharat Parmar & Aayush Goyal, *Absolute Liability: The Rule of Strict Liability in Indian Perspective*, MANUPATRA, *available at* http://docs.manupatra.in/newsline/articles/Upload/2D83321D-590A-4646-83F6-9D8E84F5AA3C.pdf (last visited on 15 Oct, 2022).
[62] *Supra, note* 6.
[63] *Supra, note* 11.
[64] *Supra, note* 6
[65] *Supra, note* 6
[66] International Atomic Energy Agency, HAND BOOK ON NUCLEAR LAW (2003) *available at* https://www pub.iaea.org/mtcd/publications/pdf/pub1160_web.pdf (last visited on 16, Oct, 2022).

from the date of 'cause of action' and not from the date from which the AERB notifies the accident as a 'nuclear incident'; including the statutory maximum of 15 days for the notification. One of the important contentions regarding limitation of time vis-à-vis the AERB's power is, what if the AERB fails to notify the 'nuclear incident' within 15 days[67]. The Act does not mention any alternatives to the same and is an issue that is apparent. Similarly, evaluating the veracity of the incident is another power of the AERB, which is ambiguous, wherein the statute is not transparent on the set of parameters that the AERB has fixed in order to notify a 'nuclear incident'. Disregarding the doctrine of intergenerational equity, Polluter pays principle, Sustainable development and Precautionary principle (upheld by the Supreme Court)[68], clearly violating the fundamental rights of the victims; it was argued that the High Court of Kerala had failed in considering the unjustified limitation of time mentioned under S.15 (2) and S.18 (b) of the CLND Act[69]. Twenty years is a short span of time to realize the effects of a nuclear accident as diseases such as cancer result from it. Effects of radioactivity can sometimes get carried forth to the next generation, as was seen in the *Chernobyl Incident.*[70]

Looking at the scenario in Canada, the NLA provided for 10 years limitation period for filing a claim for compensation. This was highly criticized and challenged in *Energy Probe et al*[71]. The limitation period is unreasonable and short for the victims to be tested with diseases that take decades together in order to be detected. It was argued that diseases like Cancer and other genetic mutation to develop and be diagnosed, might take a minimum of 20 to 30 years or sometimes even more, which is not the case in torts that arise out of non-nuclear disasters[72]. This is evidently not in accordance with both ss. 7 and ss. 15 of the "Canadian Charter of Rights and Freedoms", and victims in these cases will not be compensated adequately or may sometimes go completely uncompensated; ss. 7 of the Charter reads as[73]:

Everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice.

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[67] *Id*.
[68] *Vellore Citizens Welfare Forum v. Union of India & Ors*., AIR 1996 SC 2715
[69] *Yash Thomas Mannule & Anr. v. Union of India and Ors.*, WP(C).No. 27960 of 2011
[70] IAEA, *Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident of 1986*, Vienna (1986).
[71] *Supra note* 45.
[72] *Id.*
[73] The Constitution Act 1982, Government of Canada *available at* https://laws-lois.justice.gc.ca/eng/const/page-15.html (last visited on 16 Oct.2022).

At present, the 'Nuclear Liability Compensation Act' that replaced the NLA has increased the limitation period to 30 years, excluding the limitation period of three years for discoverability, for claims pertaining to injury, bodily injury and death[74]. For losses pertaining to property and economic damages, the period of limitation is set to a maximum of 10 years from the occurrence of the incident[75].

The Price Anderson Act has been particular on ensuring that the affected is adequately compensated. But it is not clear if the Act aims to question and prohibit the setting up of a nuclear power plant on anticipation of injury to lives of people, but is however believed that, a legislation like Price Anderson Act is required to safeguard and protect the livelihood of people in the first place, which is otherwise not established through tort law system[76]. This issue of constitutionality is yet to be addressed and deliberated upon, as the statute is elaborate enough to include aspects of foreseeing acute disasters and its aftermath. Consequently, the judiciary has defended this very issue vigorously. *In Conservation Society Vermont*[77], the plaintiffs argued that the Price Anderson Act failed to focus on public interest and on life and clean environment. The main contention was that setting up of nuclear power plants results in a constant exposure to radiation, which in turn leads to long term effects on human life. Construction and operation of nuclear facilities would violate such interests of the public, and also lead to ecological damage. The case talks about the detrimental effects of radioactivity in general, taking into consideration, the society as a whole. The District court however turned down the challenge and held that the Act did not violate the due process provision of the Fifth Amendment[78]. A similar issue was discussed in Canada when the Ontario Court of Appeal looked into the matter of 'cause of action' before deciding on the issue of "Right to life and liberty". The question was whether there existed a reasonable cause of action, to prove that the applicant has actually suffered harm, because of the establishment, production and generation of electricity from the nuclear power plant[79]. In this case, similar to the U.S, the victims did not have means to approach a court of law in order to prohibit setting up of a nuclear

[74] *Supra, note* 43.
[75] *Id.*
[76] William D. O'Connell, *Causation's Nuclear Future: Applying Proportional Liability to the Price-Anderson Act*, 64 DUKE LAW JOURNAL 333 (2014).
[77] John Galiette, *The Price-Anderson Act: A Constitutional Dilemma*, 6 BOSTON COLLEGE ENVIRONMENTAL AFFAIRS LAW REVIEW 565 (1978), *available at* http://lawdigitalcommons.bc.edu/ealr/vol6/iss4/7 (last visited on 16 Oct, 2022).
[78] *Conservation Society of Southern Vermont v. AEC*, Civil No. 19-72
[79] *Supra, note* 45.

establishment, which clearly violates the basic principles of fundamental justice such as health, dignity, social life, disruption of family and quality of life. The respondents argued that the Act was in consonance with S.91 of the Constitution Act, which enables the Government of Canada to foster nuclear energy development in the country. The Court upheld the constitutionally of the NLA[80].

The CLND Act under S.2 provides for "loss of life or personal injury" as a ground to claim compensation[81]. This injury can be either an immediate health risk or a long-term effect of the nuclear incident. The Supreme Court through various cases has established that "right to life' includes right to environment"[82]; and hence clean environment is an integral part of Article 21 of the Indian Constitution. The Standing Committee during the deliberations on the CLND Bill has clarified that the word 'environment' has the same meaning as defined under S.2 of the Environment Protection Act, 1986[83]. In, *Centre for Public Interest Litigation and Ors*[84], it was argued that the 'Polluter Pay Principle' is an important doctrine as far as industrial liability is concerned and the Act violates this principle by disregarding the health of people living within the vicinity of the Kudankulam Power Plant in Tuticorin District of Tamil Nadu[85]. The setting up of the power plant was subject to EIA clearances and proper radioactive waste management mechanism, which was also questioned. There were no adequate measures on discharge of radioactive waste from the nuclear plant, which was seen as a detriment to life and property.[86].

Industries should make sure that they follow the 'precautionary principle' and do not cause any injury or threat to the life of people and their safety[87]. Setting standards for establishment of nuclear power plants, their compliance mechanism and soundness of these set standards fixed by the AERB should also be transparent. Industrial risks in nuclear power plants are mostly associated with human errors and mechanical failures that lead to leakage of radioactive substances and other fuel materials, improper discharge which leads to the place getting inhabitable. This leads to loss of livelihood and is a clear violation of Art 21 of the Constitution. In these cases, the Indian Constitution provides for victims to file a PIL, if their fundamental rights are violated in case of

[80] *Id.*
[81] Civil Liabilities for Nuclear Damages Act 2012, S 2
[82] *Subhash Kumar v. State of Bihar*, 1991 SCR (1) 5.
[83] *Supra, note* 6.
[84] *Centre for Public Interest Litigation and Ors V. Union of India*, (Writ Petition (Civil) No. 407 of 2012).
[85] *Common Cause and Ors. v. Union of India and Ors.* Writ Petition (Civil) No. 464 of 2011
[86] *Id.*
[87] *Supra, note* 69.

nuclear incidents, giving utmost importance to public interest and human rights[88]. Public Interest Litigation serves the interest of the community at large. Right to Constitutional Remedy enables any citizen in country to approach for judicial redressal if there is a breach of any public duty that causes violation of fundamental rights of the public. The jurisdiction of the High Court of states and the Supreme Court of India under Articles 226 and 32 respectively cannot be debarred by any legislation and anybody can go to these courts to seek constitutional and legal remedy[89]. The Standing Committee observed that Sections 35 and 46 deal with separate legal remedies, but however interpreted in such a manner that all remedies that are available to the victims are to be treated as one claim[90]. To safeguard the rights of the victims, claimants should have the right to appeal to the High Court and the Supreme Court if they are dissatisfied with the orders of the Claims Commissioner or the Nuclear Damage Claims Commission's decisions.[91]

As environmental jurisprudence developed in India with insertion of constitutional provisions and legislative measures, the traditional tortious liability regime started diminishing and the Constitutionally bound principles started coming into force based on the facets of life, liberty, property and security, in the context of 'Right to clean environment'. The issue in India is whether the Act and the Rules are in conformity with the International Nuclear Law principles; which is yet to be resolved. There have been a lot of criticisms from the supplier states across the world, especially the United States, that the Indian nuclear liability framework is not consistent with the internationally recognized principles. A lot of internal pressures seem to exist to not amend the law, which the US led International Suppliers have taken advantage of[92]. Nonetheless, even the United States legislative framework on nuclear liability is also seen as a result of various political twists and turns, which contains similar issues like that of India.

INTERPRETATION OF NUCLEAR LIABILITY LAWS IN THE PERSPECTIVE OF SUPPLIER LIABILITY

[88] Sarbani Sen, PUBLIC INTEREST LITIGATION IN INDIA: IMPLICATIONS ON LAW AND DEVELOPMENT, 1-37 (2012) (E- Book).
[89] *Id.*
[90] *Supra, note 6*.
[91] Civil Liability for Nuclear Damages Act 2010, S 19
[92] IAEA, Convention on Supplementary Compensation for Nuclear Damage Online Calculator, *available at* https://www.iaea.org/publications/documents/treaties/convention-supplementary-compensation-nuclear-damage/online-calculator (last visited on 16 Oct, 2022).

In *United States v Five Gambling Devices 346 U.S. 441 (1953),* the court observed that it should follow the "strong presumption of constitutionality" to Acts of Congress. Similarly in India, in *ML Kamra*[93]it was observed that*:*

The court ought not to interpret the statutory provisions, unless compelled by their language, in such a manner as would involve its unconstitutionality.

The reason why this concept is included into the framework of laws of Nuclear liability is that, a legislation is considered to be an enactment by a legislature that abides by the principle of 'Rule of law' and that does not contravene constitutional principles. Thus there is a presumption that a particular legislation is in the interests of the constitutionality, unless it infringes on individuals' fundamental rights.

Constitution being the '*grund norm'* of a state*,* all laws of the land need to be in conformity with it and Nuclear Law is no exception. At first, the sole purpose of nuclear laws was confined to regulate the use of nuclear weapons and militarization. But this concept cannot be justified anymore, as other purposes of nuclear substances and radioactivity are now well known across the globe[94]. Over time, nuclear as a form of energy evolved, that needed to be regulated. The CLND Act seems to protect the right to clean, healthy environment of the people, which is a part of Article 21 of the Constitution. It limits the liability by placing a cap on the liability amount but still supports 'absolute liability', which basically means 'unlimited liability'. So the question that is left unanswered here is whether the Act is to be presumed constitutional considering the fact that it adopts absolute liability principle, including the 'polluter pay principle'. These principles brought in through liberal interpretation and tort law principles considering the fears of people from different social categories, and general commitments of the government to the society. The CLND Act in India establishes a fixed responsibility on the part of the operator as well as the state in dealing with the aftermath of a nuclear incident. However, there are some interpretational issues that the law creates while explaining and executing, especially the Rules. Although it was argued that the rules do not conflict the Act, various opinions of legal experts view that the 2011 Rules are seen to be sidestepping the Act. Interpretation of these Rules in a modified manner was attempted in order to meet the interests and clear the confusion in the minds of international suppliers. One such major interpretational issue was Section 17 of the Act and Rule 24. While Section 17 (a) provides for right

[93] *ML Kamra v. New India Assurance*, 1992 AIR 1072.
[94]*Supra, note* 7.

of recourse of the operator in accordance with the contract entered into, sub clause (b) provides for a limitation in the amount of recourse that could be exercised by the operator for the patent or latent defects of the supplier, which has to be read with Rule 24 that defines the 'Product Liability Period'[95]. On one hand, according to the Rule, the operator is entitled to hold the supplier responsible as a recourse claim but on the other, the Rule limits the liability of the supplier with respect to time and amount. It is not clear if the liability is limited according to the Rule read with the provision of the Act, or is actually open-ended which is the primary aim of the CLND Act. Taking this interpretational issue into account, it is clear that there exists an inconsistency with Section 6 read with Section 17 of the Act, as well as Rule 24(1).

It was argued that if the operator does not pursue his right of recourse against the supplier, under Section 46 any person who has been affected could seek tortious remedy against the supplier for the damage caused due to the nuclear incident[96]. But in this case, before interpreting the provision in the above manner, it is important to appreciate and realize the domestic liability jurisprudence. Without understanding the requirements of a domestic law, a mere strict interpretation of the respective international law is futile.

The question whether Section 46 of the CLND Act applies to supplier is another important interpretational issue. Going on the principle of 'legal channeling', all liabilities arising out of a nuclear incident is channeled only to the operator and the provision does not apply to the supplier at any cost and going on principle of strict interpretation of the provision, the Parliamentary debates before the Act came into force, also confirms the same. When Rajya Sabha moved this provision with an amendment to include supplier under Section 46, it was negated saying, if a provision was excluded expressly, by statutory interpretation it cannot be read into the statute while applying it and that the 'intention of legislature' must be given the utmost importance[97].

Even during Parliamentary deliberations, it was discussed that while the provision for right

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[95] Civil Liabilities for Nuclear Damages Rules 2011, Rule 24.

[96] MINISTRY OF EXTERNAL AFFAIRS, *Frequently Asked Questions and Answers on Civil Liabilityfor Nuclear Damage Act 2010 and related issues*, GOVERNMENT OF INDIA *available at*https://www.mea.gov.in/press-releases.htm?dtl/24766/Frequently_Asked_Questions_and_Answers_on_Civil_Liability_for_Nuclear_Damage_Act_2010_and_related_issues (last visited on 16 Oct, 2022).

[97] *M/s. Turtuf Safety Glass Industries v. Commissioner of Sales Tax U.P.*, 2007 (9) SCALE 610

of recourse under S.17 (b) interpreted by the courts, there is a need to focus on the 'external aids' of interpretation[98]. The provision tends to extend and disconnect from sub clause (a) and the courts ought to decide on the claim, even if there is no right of recourse.

The Canadian Law has also undergone interpretational issues with terms such a 'nuclear incident', 'preventive measures' and 'nuclear material'. Since the definition of 'nuclear incident' in the CSC and the Canadian law is difficult to interpret in accordance with meaning of 'preventive measures', there exists an impractical situation in awarding the compensation based on the time frame and the 'precautionary principle'[99]. In the case of nuclear installation', while the NLA defines that a nuclear facility should contain 'nuclear material', the meaning of 'nuclear material' in the Act is ambiguous in itself. The meaning was subject to different interpretations in the past because the definition included only aspects such as radioactive material production, its consequential exposure and contamination. Therefore it was difficult to decide on the liability based on 'transportation of nuclear and radioactive substances' since this aspect was not explicitly mentioned[100].

Under the Price Anderson Act, it is interpreted that the mere right to file a suit does not mean that there is an automatic right to collect compensation. The interpretation is that, in case a claimant wins the case and the operator is unable to pay the claims, it would lead to the defendant exhausting his assets, which in turn would affect the claimant if his compensation goes unclaimed. Keeping in mind that the away shall be adequate and not sufficient, the Act's primary objective is to provide equitable compensation without prejudice to any party.

The CLND Rules in India on the face of it appears to remove the ambiguity in the Act with regard to the supplier's quantum of liability, but actually does not. The rules do not refer to the issues that exist under Section 17(b) of the Act, as well as operator's liability under Sec 46. As soon as India ratified CSC, it had the onus to amend the law accordingly, but the government sees its move on merely ratifying CSC as a conclusive step in terms of the nuclear liability issues that have been envisaged. This would have rectified a major interpretational issue. But, Making India stick to 'legal channeling' and not hold the suppliers liable surely violates the fundamental rights of the people. The US has purposely exempted itself legal channeling by inserting a grandfather clause to the CSC. On the other hand Canada has not provided for supplier's liability in its domestic legislation, thereby strictly following the principle of legal channeling. However, in Canada in

[98] *Supra, note* 50.
[99] Supra, note 43.
[100] Nuclear Liability Act, 1985, § 2

terms of liability amount, the quantum is increased from time to time along with clearly laying down the opportunities for which compensation can be claimed. The CDNL Act in India has to be recommended for amendment in lines with the CSC or India has to firmly stand by its act that it follows currently thereby setting example to other countries as an equitable nuclear liability regime. But untangling this tight rope would be challenging for the parliament and inflates legal and policy related complexities, considering India's stand on absolute liability principle and wider interpretation of Art 21 of the Constitution.

CONCLUSION

Nuclear liability regime has been advocated across the world especially with respect to the issue of limited liability. The liability mechanism in all three jurisdictions as discussed above has seen similar issues time and again and yet remain unresolved. Although issues pertaining to liability remain similar, the judiciary has dealt with the procedural way out in different cases. However, when it comes to comparing the same with International Nuclear liability, principles of limitation of liability and time, all three countries have applied the substance of the principles in their national laws harmoniously. It is perceived that the liability is limited under the CLND Act, but the statute gives power to the victims to seek 'unlimited' compensation, which is extra-ordinary in nature. Similarly, both in case of the Price Anderson Act and the recent NLCA, the limits of liability in amount are revised time to time, which shows that the procedural characteristic is incidentally open ended and not restricted. The 'grandfather clause' to the US in the CSC exempts it to apply legal channeling. But India' legal and policy stands have already been established in such a manner that it cannot just hold an operator liable and place a cap on the quantum of liability. India also follows the 'polluter pays principle' reiterated by its apex court. Merely because it is difficult to find who exactly committed the wrong, the burden cannot be placed on the operator completely and the actual wrongdoer cannot escape his liability.

No-fault liability at any cost cannot be capped. Principles of equity and fairness require all victims to claim their compensation against the party responsible for the nuclear accident. This also encourages, suppliers to improve the quality and standards of the equipment being supplied to be operator. To address the issue on supplier's liability, the limited liability principle must not apply to situations under Sec 17 of the CLND Act and the affected must be able to claim their remedies from the suppliers going by the principles of absolute liability since the Act does not have any explicit prohibition of holding the suppliers liable. The laws are subject to constitutional scrutiny as far as

the Right to life of people is concerned, but remain unanswered by the courts. To justify the purpose of the Right to constitutional remedies, citizens must have the right to approach the High Courts and Supreme Courts and file PILs apart from remedies available in the Act. The pending litigations before the Supreme Court must be settled as soon as possible in so far to obtain certainty concerning the supplier's liability and quantum of compensation. To further strengthen this system, the quantum of the insurance pool must be increased.

Nuclear Law principles sometimes differ from common law concepts due to their evolved unique characteristics over time. Hence, it is vital to understand that, in the case of CLND Act vis-à-vis the International conventions, the specific law of the land prevails over general law. Governments have been caught between effectively compensating the affected on the one hand without prejudice to the operators, the suppliers and the nuclear business community, on the other. While fostering nuclear energy to attain energy security is the primary objective of states, there is a need to balance it with the safety of its people and their property, thereby achieving sustainable development.