THE PROBLEM OF LIABILITY FOR NUCLEAR INCIDENTS IN THE PHILIPPINES

TEODORICO C. TAGUINOD*

As in the case of the Industrial Revolution,[1] the harnessing of atomic energy for peaceful uses, especially for generating power, calls for adjustment or innovation in the existing principles or rules of the legal system. Fortunately, the law of nuclear energy has not been permitted to fall behind the efforts to develop the new source of energy. Legal scholars, businessmen and government officials have actively addressed themselves to its legal problems, and national legislation as well as international conventions have dealt with the subject.

The use of atomic energy for the generation of electric power for industrial use as a supplement or alternative to conventional fuel is becoming more firmly established, after an initial setback from the over-optimism in the early 1950's of the economically competitive status at that time of nuclear power reactors. On the basis of current power reactor operating experience and thorough economic feasibility studies, experts of various countries envisage that nuclear power will become economically competitive with conventional power by the end of the present decade, particularly in the areas where conventional fuel costs are especially high.[2]

In the Philippines, it seems that a case has been made for giving serious consideration to installing a nuclear power plant in the very immediate future, as a matter of economic necessity. There are several factors that strongly conduce to the early utilization of nuclear power in this country. Its known natural resources of conventional energy are limited. Except for some minor indications, no significant findings have been recorded so far in the search for oil and gas, and the hydro-potential which is spread over many islands will not eventually suffice to meet the requirements of a rapidly increasing power market. Thermal power stations rely on imported fuel and any expansion program necessarily indicate either

---

* Associate Professor of Law, University of the Philippines.

[1] The inability, for instance, of the common law to adapt its substantive rules or procedural techniques to the exigencies of the then new industrial age, led to the subsequent enactment of workmen's compensation acts. RIESENFELD & MAXWELL, MODERN SOCIAL LEGISLATION 129 (1950).

[2] *Operating Experience with Power Reactors*, I.A.E.A. Bull., Oct., 1963, 5; also, *A Long-Term Programme for IAEA*, *id.* at 11.

greater importation of fuel with a resulting heavier drain on foreign exchange, or, alternatively, the tapping of atomic energy.

As a result of an initial study made in the Philippines by the International Atomic Energy Agency, which found the economic conditions bright for the use of atomic energy as a source of electric power,[3] the Philippine Government with the assistance of the United Nations Special Fund undertook a more detailed study with the end in view of projecting an optimum power expansion program up to 1975 and determining the role in such program, from the viewpoint of economic feasibility, of nuclear power plants vis-a-vis conventional oil-fired steam plants. Careful calculations under the foregoing study show that in the main island of Luzon which, on account of its very high load factor, offers a favorable possibility for the base load operation ideal for nuclear power plants, the grid system situation in 1971 would make the operation of a 300 megawatts power reactor appear economically realistic.[4] Furthermore, if the economic conditions expected to exist in 1971 would make nuclear power competitive, a total nuclear program for the succeeding years will result.[5]

It is clear then that the Philippines must face up to the legal problems posed by the operation of power reactors. These problems relate primarily to (1) the establishment of a system of government control and regulation over nuclear activities to ensure sufficient protection to health and safety, (2) the determination of the rules of legal liability for personal injury or property damage caused by a nuclear incident, and (3) the provision for a system of financial protection against the risk of a nuclear incident adequate to the needs of both the public and the nuclear industry under the rules of legal liability.

The first problem is concerned with the prevention or minimization of nuclear incidents through a scheme of licensing, supervision, and other forms of regulation over nuclear activities, ranging from the construction and operation of nuclear facilities to the distribution and use of radioisotopes and disposals of radioactive wastes. It is a problem that moves mainly in the domain of administrative law.[6]

There is, despite every safety precaution, a possibility, however remote, of a nuclear incident. The second and third problems

---

[3] *Prospects of Nuclear Power in the Philippines*, I.A.E.A. (STI/DOC/10/3) (1961).

[4] See IAEA-UNDP, *Pre-Investment Study on Power Including Nuclear Power in Luzon* (General Report) (June, 1966).

[5] *Ibid.*

[6] For a discussion of the problems encountered in adopting the administrative process in the United States to nuclear safety determinations, see Cavers, *Administrative Decision-Making in Nuclear Facilities Licensing*, 110 U.PA. L. REV. 330 (1962).

above-mentioned address themselves to the event of such safety failure. It has been the common consensus that the present rules on third-party liability for personal injury or property damage arising from conventional risks are not adequate for the special hazards of nuclear operations[7] and the adoption has been advocated of special legislation which will assure the maximum financial protection to the public without, however, imposing on the nuclear industry an unreasonable or indefinite burden of liability.

Consideration of these problems require a recognition of the various possibilities of radiation injury because of their effect upon the shape of the law. A nuclear incident may range in size and severity from vast devastating affairs with widespread damage to persons and property, down to minor incidents involving, perhaps, no more than a slight over-exposure of a single person. In terms of monetary damages they may involve very large sums necessary to compensate for widespread devastation, or they may be trivial matters that are *de minimis* so far as the law is concerned.[8] The activities causing the damage may range from undertakings of a relatively hazardous character such as the operation of a nuclear power reactor, which creates large amounts of dangerous radiation and produces dangerous waste products, to what has become almost commonplace and routine affairs such as the use of radioisotopes in medicine, industry, and agriculture. The extent of damage will depend also on the location of the nuclear activity: thus, nuclear incidents may take place either in highly populated areas where radioactive materials can cause great damage within a narrow radius, or they may occur in relatively unpopulated regions where even an otherwise serious reactor "run-away" may happen without affecting a considerable number of individuals. The financial condition of the person responsible for the damage may be entirely sufficient to meet the situation, or, on the other hand, he may be

[7] For the view that the traditional tort rules will adequately meet the problems of atomic energy, see Becker & Huard, *Tort Liability and the Atomic Energy Industry*, 44 GEO. L. J. 58 (1955). For a not too technical discussion of the basic characteristics and technology of atomic energy and its potentiality for causing injuries to persons and property, see STASON, ESTEP & PIERCE, ATOMS AND THE LAW 3-81 (1959).

[8] An often cited study on the probable results of a nuclear incident is AEC, *Report on Theoretical Possibilities and Consequences of Major Accidents in Large Nuclear Power Plants* (March 1957), I CCH ATOMIC ENERGY L. REP. Sec. 4031 (1957). According to this report, "theoretical estimates indicated that personal damage might range from a lower limit of none injured or killed to an upper limit, in the worst case, of about 3400 killed and about 43,000 injured. Theoretical property damages ranged from a lower limit of about one half million dollars to an upper limit in the worst case of about seven billion dollars." Although these estimates are inconclusive when applied to conditions in the Philippines, they may acquire relative significance in the latter country by a proper scaling of the financial measures used according to the property values and awards for death or personal injury in the Philippines.

quite unable to make redress, leaving the injured parties to bear the burden of their own loss.

Personal injuries may take different forms. Short of fatality they may consist of cancer, cataract, leukemia, genetic damage, shortness of life span or comparatively less serious effects such as bone marrow damage, superficial burns or loss of hair.[9] The damages may be either immediately apparent or they may be remote, speculative, and difficult to prove.

Finally, account must be taken of the operator who puts in motion the radioactive substances causing the damage. Such operator may be an electric power company owned either by private enterprise or by the government, or a private industry using radioisotopes for industrial purposes, or a manufacturer of reactor facilities or a supplier of component parts or materials.

One more important aspect of the legal problems must be briefly touched upon. While there has been emphasis on the fact that the probabilities of a major nuclear incident are remote, they nevertheless do exist. The immediacy of the legal problems cannot be shrugged off by any reference to such remoteness. That these problems have more than just theoretical significance is underscored by the fact that no responsible enterprise is willing or prepared to move in the nuclear reactor field without sufficient assurance of proper financial protection.

This paper will deal with the problems of third party liability and financial protection arising from a nuclear incident caused by the operation of a nuclear reactor. In the following pages, the rules of tort liability presently existing in the Philippines shall be examined with the end in view of determining their adequacy to support any economic policy to utilize nuclear energy for the generation of electric power and if found to be inadequate or unsatisfactory in what respects they should be supplanted or modified in order to make the law more responsive to the needs of such policy. Specifically, the more important questions to be resolved are: What theory or doctrine of tort liability should be applied against the person who shall be held responsible for damages? Should such person be held to a duty to exercise "reasonable care," under which "negligence" constitutes the breach, or, should it be "strict liability," under which such person is held liable irrespective of the care which he has exercised? Assuming that serious monetary liability may constitute a deterrent to the rapid development of the peaceful uses of atomic energy, what system of financial pro-

[9] See NAS, *The Biological Effects of Atomic Radiation (A Report to the Public)* (1956); NAS, *The Biological Effects of Atomic Radiation (A Report to the Public)* (1960); also, GLASSTONE, SOURCE BOOK ON ATOMIC ENERGY 588-593 (2nd Ed., 1958).

tection should be established that would provide adequate compensation to the injured and yet relieve the responsible industry of any crushing liability burden?

The question of liability has other aspects but these can be dealt with adequately in a separate paper. Among them are the theory of liability that should be applied to manufacturers and suppliers of nuclear reactors, equipment and component parts; the statute of limitations that is proper for long-delayed effects of radiation injuries; the rules on proof of causation with respect to such long-delayed effects.

I. THEORY OR DOCTRINE OF LIABILITY

In determining whether there is responsibility in tort to make reparation when harm has been caused, the focal point of conflict has been whether one should be liable for harm irrespective of fault. Underlying the conflict are the two basic interests of individuals rivaling for protection from the state: the interest in security and the interest in freedom of action. The protection of the first requires that a person who has been harmed as a result of the activity of another should be compensated by the other irrespective of his fault; the protection of the second requires that a person who harms another should be required to compensate the other only when his activity was considered a departure from a standard of conduct required of a man by society for the protection of his neighbors.[10] In its attempt to protect these two fundamental interests, the law has been in a state of flux and, according to one writer has moved in cycles, alternating periods of strict liability with liability based on fault.[11]

In the civil law systems tort responsibility is primarily predicated on fault or negligence, a principle traceable to the *Lex Aquilia* of Roman Law.[12] Likewise, in common law countries, one of the important grounds for liability is negligence.[13] The development of the principle of negligence in common law countries received impetus in the eighteenth century under the doctrines of natural law and of *laissez faire* which placed emphasis upon freedom of action.[14] This movement in the direction of identifying liability with culpability, culminating at the end of the nineteeth century, led to efforts of constructing a consistent theory of tort law upon the

---

[10] Seavey, *Principles of Torts*, in ESSAY ON THE LAW OF TORTS (selected from the HARV. L. REV.) 2 (1959).

[11] Isaacs, *Fault and Liability*, 31 HARV. L. REV. 954, 966 (1918).

[12] See RADIN, HANDBOOK OF ROMAN LAW 144 — 148 (1927).

[13] See PROSSER, LAW OF TORTS 24, 117 (1955) (hereinafter cited as PROSSER).

[14] Seavey, *supra* note 10.

basic principle that there should be no liability without fault.[15] With the twentieth century, however, there has been a tendency to gravitate from liability only in case of fault toward the principle of strict liability or liability without fault.

The notion of strict liability finds its roots in primitive law which laid stress on security.[16] The principle for instance was manifested in the rule attaching strict liability to the owner for injuries caused by escaping animals, a rule which survives in present-day jurisprudence.[17] Modern views of policy partly strengthen today the primitive concept of strict liability.

The search for an apposite theory of liability applicable in the nuclear energy field will undoubtedly require the striking of a balance between the above-mentioned basic interests of individuals. The primary concern here is the adoption of a theory which, by taking into consideration the peculiar hazards of nuclear energy, will avoid iniquitous results, especially as regards the ability of the injured public to recover compensation. Where litigation is involved, it is basically a question of what the plaintiff needs to prove, other than that the accident was the legal cause of his injury, in order that he may be entitled to a favorable judgment. At opposite ends of the spectrum of liability theories are the concepts of liability for fault or negligence and absolute or strict liability, which were mentioned here earlier. In the case of the former, the plaintiff, in order to recover, must prove that the nuclear incident was caused by some fault or negligence on the part of the defendant; in the latter case, the plaintiff will be awarded damages regardless of whether the defendant was at fault. Along the path between these two principles may be found doctrinal variations such as when, under certain conditions, a presumption of negligence arises, thereby shifting the burden of proof to the defendant to show, in order to prevent recovery, that the event causing injury was not due to his fault; or else, where the substance of strict liability appears in the apparel of negligence as when the presumption of negligence is conclusive.

As will be seen later,[18] the principle of strict liability distinctly predominates in national legislation of various countries and international conventions specifically dealing with this legal problem of atomic energy. Although United States federal law[19] provides

---

[15] PROSSER at 315-316.

[16] Seavey, *supra* note 10.

[17] E.g., Art. 2183 of the Philippine Civil Code which provides, "The possessor of an animal or whoever may make use of the same is responsible for the damage which it may cause, although it may escape or be lost. This responsibility shall cease only in case the damage should come from *force majeure* or from the fault of the person who has suffered damage."

[18] See pp. 591-92 *infra*.

[19] 71 STAT. 576 (1957).

for a scheme of financial protection for the public and the nuclear industry against a nuclear incident occurring in the use of nuclear power reactors, the question of liability is left to state law thus leaving the doctrinal principle uncertain.

This paper advocates the adoption in the Philippines of the theory of strict liability for nuclear harm caused by the operation of power reactors. To assess the results that might be reached under negligence rules, the application of the concept of negligence in the nuclear field will be first discussed so that the inadequacy of such rules may stand out in sharper focus. Next, some existing variations of the doctrines of negligence and strict liability will be considered to determine their appropriateness. Then the case for strict liability will be made.

A. Negligence as the Basis of Liability

The essential elements for establishing a cause of action based on negligence are: (a) a duty of the defendant to conform to a certain standard of conduct for the protection of others against unreasonable risks; (b) a breach of this duty by the defendant; (c) a reasonably close causal connection between the conduct and the resulting injury (legal cause or proximate cause); and (d) a legally recognized loss or damage to persons or property.[20] The problems of causation and damages are the most peculiar and difficult when considering atomic energy activities.

Duty to conform to certain standard of conduct. —

Although this element seems more problematic in the United States than in the Philippines, it merits brief discussion here in the light of the character of reactor operations and the attendant hazards.

The problem is spoken of in terms of "foreseeability." In some jurisdictions, a limitation is placed upon the types of injuries and the plaintiffs who will be allowed to recover. The limitation is fixed on the basis of what reasonably could be foreseen. To assess this limitation as applied to the defendant with reference to risks connected with reactor operations, it will be helpful to bear in mind the manner by which injury may be caused through such reactor operations and the resulting types of injury.

The danger of a "nuclear incident" arises from the possibility of a "burn up" or "melt down" of a nuclear reactor breaking the reactor "containment," or simply an instrumentation failure, resulting in the release of highly dangerous radioactive gases or particles into the surrounding environment, contaminating the air, streams, realty and personalty. Humans, as well as property, ex-

[20] PROSSER at 165; Taylor v. Manila Electric Co., 16 Phil. 8 (1910).

posed to the radiation emanating from the released gases and particles may suffer severe injury or damage. In case of adverse meteorological conditions prevailing at the time of the incident, the radioactive contaminants would be spread over far-flung areas, causing damage even hundreds of miles away. Injuries to living matter such as plants, aquatic and animal life may eventually result in injuries to persons. For instance, if the flesh or milk of a cow which had eaten matter contaminated by radiation were in turn eaten or drunk by humans, the latter may suffer personal injuries caused by ingested radioactive materials.

As regards the peculiarity of the types of injury produced by radiation, it may be mentioned here that a characteristic of radiation is its cumulative nature. What may be a non-deleterious exposure may contribute to harmful overexposure when added to other radiation, itself either permissible or wrongful. Another characteristic of radiation is that many of the injuries caused by it can also be caused by other forces including natural phenomena, known or unknown. Often it will be impossible to determine the specific causal factor for such illnesses as cancer, cataract, and leukemia. In addition, there are many sources of radiation, such as natural background emissions, radioactive debris from bomb tests, and radiation treatment in the course of medical therapy. One other peculiarity of radiation injury is that it may take several years before it becomes manifest. Again, radiation may inflict genetic damage on a person, without even his being aware of it, with the possible effect of mutation being transmitted to the person's offspring.

Assuming therefore the application of negligence rules on the liability of the defendant for radiation injury resulting from reactor operations, the consideration anew of present jurisprudential developments on the question of the extent of duty owed by the defendant is necessary. What will have to be determined is whether the defendant is liable only for those kinds of injury which could be reasonably foreseeable and only to those plaintiffs injured by his wrongful conduct, whom he reasonably could have foreseen might be injured.

In the United States, there is much divergence of opinion among the courts and authorities concerning the scope of duty and to whom it is owed in negligence cases.[21] On the question of liability for unexpected types of injuries, the prevailing rule is to allow recovery with respect to a plaintiff whose injury might reasonably have been foreseen in some way. As a noted writer puts it: "Most courts agree that there may be liability for unforeseen con-

[21] PROSSER at 171.

sequences, beyond the original risk, to those within the zone of apparent danger."[22]

The thornier problem about duty around which controversy has raged concerns what has been called the problem of the "unforeseeable plaintiff."[23] If the defendant's conduct threatens harm, which a reasonable man would foresee, to A, then he is negligent toward A, and there is a great deal of authority to the effect that he is liable for all damages resulting directly to A, even if the damage itself was not to be anticipated.[24] To this extent, at least, liability may extend beyond the scope of original risk. But suppose harm results instead to B, who is outside the zone of any apparent danger, and to whom no damage could reasonably be foreseen? Is the defendant's duty limited to A, or can there be vicarious negligence to B?

That was precisely the issue considered in the leading American case of *Palsgraf v. Long Island Railroad Co.*[25] As a passenger was running to catch one of the defendant's trains, the defendant's employee, in assisting him to board it, dislodged a package from his arms, and it fell upon the rails. It turned out that the package contained fireworks which exploded with some violence. The concussion overturned some scales, several feet away at the other end of the platform, and they fell upon the plaintiff and injured her. The defendant's employees, who were found by the jury to be negligent, could have foreseen harm to the package, or at most to the passenger boarding the train; no harm to the plaintiff could possibly have been anticipated. The Court was divided on the question of the plaintiff's right to recover damages, the majority ruling that there was no liability because there was no negligence toward the plaintiff. According to Justice Cardozo, who penned the majority opinion, negligence was a matter of relation between the parties, which must be founded upon the foreseeability of harm to the person in fact injured. The defendant's conduct was not a wrong toward her merely because it was negligence toward someone else. She must sue in her own right for a wrong personal to her, and not as the vicarious beneficiary of a breach of duty to another.

The dissenters, speaking through Judge Andrews, reasoned that due care is a duty imposed upon each one to protect society from unnecessary danger, not to protect specific individuals in isolation.

---

[22] PROSSER at 171; *cf.* HARPER & JAMES, *op. cit. supra* at 1021.

[23] PROSSER at 169.

[24] RESTATEMENT, TORTS Sec. 435 (1938): Bohlen, *The Probable or the Natural Consequences as the Test of Liability in Negligence*, 49 AM. L. REV. 79, 148 (1901); Smith, *Legal Cause in Actions of Tort*, 25 HARV. L. REV. 103, 223 (1911); Myers, *Causation and Common Sense*, 5 MIAMI L. J. 238 (1951); Seavey, *Mr. Justice Cardozo and the Law of Torts*, 52 HARV. L. REV. 372 (1939).

[25] 248 N. Y. 339; 162 N. E. 99 (1928).

Everyone owes to the world at large the duty of refraining from those acts which unreasonably threaten the safety of others. Not only is he wronged to whom harm might reasonably be expected to result but he also who is in fact injured even if he be outside what would generally be thought the "danger zone."

While the *American Restatement of Torts*[26] has accepted the majority view of the *Palsgraf* case that there is no duty to the unforeseeable plaintiff, subsequent decisions in the United States, it is pointed out, cannot be said to have settled the question.[27] The problem remains open to controversy and still hangs fire. In the words of one authority — "the present state of the law is, then, one of troubled waters, in which anyone may fish."[28] However that may be, it is clear that American courts impose liability on the defendant neither for every single consequence caused in fact nor to every plaintiff harmed in fact by his negligent act. And it is generally agreed that the notion of foreseeability is the criterion by which the courts determine whether the injury to the particular plaintiff is compensable.[29] It should be added, however, that it is also the rule that distance and intervening forces which could have been foreseen or which may be considered as normal incidents of the risk created, do not prevent the imposition upon the defendant of a duty of due care to a remote plaintiff.[30]

Probing the decisional trend in the problem area of duty in negligence cases and its relevancy to atomic energy, the authors of one treatise conclude:

> "...in those cases where strict or absolute liability is not applied, atomic energy cases, insofar as the scope of duty is concerned, will be decided in accordance with the normal rules, although the fact situations will call for application of those rules in somewhat different situations than have been known heretofore. It seems rather clear that the courts will not impose a duty on defendants as to all persons that may possibly be injured by radioactive substances negligently released. Whether stated in terms of scope of duty, foreseeability, or proximate cause, some such limitation seems very likely. It is even possible that a court, as a matter of social policy, will place such a limit on possible plaintiffs so as not to impede unduly the development of a new industry. It seems equally clear, however, that the range of plaintiffs to whom the atomic energy enterpreneur will be liable is extremely broad, and that time, space, and transformation characteristics of the radiation source

---

[26] Sec. 281.

[27] See Prosser, *Palsgraf Revisited*, 52 MICH. L. REV. 1, 8-12 (1953).

[28] PROSSER at 171.

[29] See 2 HARPER & JAMES, THE LAW ON TORTS 1018 — 27 (1956); PROSSER at 166 — 75.

[30] Chapman Chemical Co. v. Taylor, 215 Ark. 630, 222 S. W. 2d 820 (1949); see cases discussed in PROSSER at 266 — 74.

will not place any very serious limitations on the rights of injured persons to recover."[31]

In the Philippines, the question of whether a duty to conform to a certain standard of conduct is owed by the defendant only to a foreseeable plaintiff has not been raised in the cases. The Philippine Civil Code provides: "In crimes and quasi-delicts,[32] the defendant shall be liable for all damages which are the natural and probable consequences of the act or omission complained of. It is not necessary that such damages have been foreseen or could have reasonably been foreseen by the defendant."[33] Thus in this jurisdiction, it is clear that the defendant shall be liable even for damages which have not been foreseen or could not have been reasonably foreseen by him provided that such damages are the natural and probable results of his conduct.

By virtue of the foregoing provision of law, the courts, in determining whether a defendant should be held liable for certain conduct, limit themselves to the inquiry whether or not such conduct is negligent in itself. If the act complained of is negligent in itself, then the defendant's liability arises; the scope of his duty lies within the perimeter only of natural and probable consequences, irrespective of their being foreseeable.[34] In other words, as long as the requirement of a negligent act is satisfied, the question of remoteness or non-remoteness of a particular plaintiff, which will affect liability of the defendant to him, is resolvable not in terms of foreseeability of harm to such plaintiff, but only in terms of the harm caused to him being deemed natural and probable consequences of the defendant's negligent act, and this without regard to whether they have been foreseen or could have been reasonably foreseen.

In brief, the dissent in the *Palsgraf* case is the prevaling rule in the Philippines. Implicit in the cases[35] is the notion of duty to society at large of adhering to such a standard of conduct as not to unreasonably threaten the safety of others. Responsibility for

---

[31] STASON, ESTEP & PIERCE, ATOMS AND THE LAW 99 (1959).

[32] Art. 2176 of the Civil Code defines "quasi-delict" thus: "Whoever by act or omission causes damage to another, there being fault or negligence, is obliged to pay for the damage done. Such fault or negligence, if there is no pre-existing contractual relation between the parties, is called a quasi-delict..."

[33] Art. 2202.

[34] See Wright v. Manila Electric Co., 28 Phil. 122 (1914); De Guia v. Manila Electric Co., 40 Phil. 706 (1920); Del Prado v. Manila Electric Co., 52 Phil. 900 (1929); Cangco v. Manila Railroad Co., 38 Phil. 768 (1918); Astudillo v. Manila Electric Co., 55 Phil. 427 (1930); Villanueva Vda. de Bataclan, *et. al.*, v. Medina, G.R. No. 10126 Oct. 22, 1957, 54 O. G. 1805 (March, 1958); Bernal and Enverso v. House, *et. al.*, 54 Phil. 327 (1930). *Cf.* Gabeto v. Araneta, 42 Phil. 252 (1921).

[35] *Ibid.*

damages lies with respect not only to one who might reasonably be expected to be harmed but also to anyone who is in fact injured, although he be outside the so-called danger zone.

This concept of an absolute wrong, in the United States, rejected in the field of tortious negligence, remains in the areas of criminal law[36] and intentional torts.[37] In the Philippines, it applies to both crimes and quasi-delicts (even non-intentional torts) as expressly provided by law.[38] This is the rule also in the continental civil law.[39] The concept of a relative duty, which was previously discussed here, obtaining with respect to tortious negligence in the United States, has been criticized as serving no useful purpose and producing only confusion in that jurisdiction.[40] As it has been pointed out, the artificial character of the doctrine is readily apparent: in the ordinary case, if the court should desire to find liability, it would be quite as easy to find the necessary "relation" in the position of the parties toward one another, and hence to extend the defendant's duty to the plaintiff.[41] The statement that there is or is not a duty begs the essential question — whether the plaintiff's interests are entitled to legal protection against the defendant's conduct.[42]

This points to the essential character of the problem as being one more of social policy rather than legal. As one authority aptly puts it:

> "The real problem, and the one to which attention should be directed, would seem to be one of social policy: whether the defendant in such cases should bear the heavy negligence losses of a complex civilization, rather than the individual plaintiff. Because these defendants are in large measure public utilities, governmental bodies, industries, automobile drivers, and others who by rates, prices, taxes or insurance are better able to distribute the loss to the general public, many courts may reasonably consider that the burden should rest upon them, and experience no great difficulty in finding a "duty" of protection. So far as policy is concerned different answers might well be given in different communities, according to the view that is taken as to where loss should fall; but the issue is not to be determined by any talk of "duty", or an assumption of the conclusion."[43]

---

[36] State v. Renfrow, 111 Mo. 589, 20 S. W. 299 (1892); State v. Dalton, 178 N. C. 779, 101 S. E. 548 (1919).

[37] Morrow v. Flores, 225 S. W. 2d 621 (Tex. Civ. App.) (1950); Bannister v. Mitchell, 127 Va. 578, 104 S. E. 800 (1920); Carnes v. Thomson, Mo. 48 S. W. 2d 903 (1932).

[38] Art. 2202, Civil Code. See p. 20, *supra*.

[39] Winfield, *Duty in Tortious Negligence*, 34 COLUM. L. REV. 41 (1934); Buckland, *The Duty to Take Care*, 51 L. Q. REV. 637 (1935).

[40] *Ibid.*

[41] PROSSER at 167.

[42] *Ibid.*

[43] *Id.* at 172.

The foregoing observations precisely apply to the atomic energy industry. The solutions to this question of social policy evidently should be sought through explicitly clear legislative enactment instead of by reliance upon uncertain and inconstant judicial determination.

Failure to conform to standard required. —

It is this element that is primarily deteminative of the existence of negligence. A plaintiff claiming compensation for radiation injury will have to show that the defendant was negligent in that he deviated from or failed to observe the standard of conduct or degree of care applicable to the atomic energy activity being undertaken. This element therefore requires, first, the determination of what the standard of conduct should be and, second, proof of failure on the part of the defendant to observe such standard.

The concept of negligence in Philippine law is substantially the same as in American law. The American Restatement of Torts defines negligence as conduct "which falls below the standard established by law for the protection of others against unreasonably great risk of harm."[44] According to the Philippine Civil Code the "fault or negligence of the obligor consists in the omission of that diligence which is required by the nature of the obligation and corresponds with the circumstances of the persons, of the time and of the place."[45] Or in the words of the Philippine Supreme Court, negligence is "want of care required by the circumstances. It is a relative or comparative, not an absolute term, and its application depends upon the situation of the parties and the degree of care and vigilance which the circumstances reasonably require. Where the danger is great, a high degree of care is necessary, and the failure to observe it is a want of ordinary care under the circumstances."[46]

Unless the law specifically establishes a different standard of care or degree of diligence, that which is expected of a "good father of a family" is required.[47] This is fully explained in the case of *Picart v. Smith*:[48]

> "The test by which to determine the existence of negligence in a particular case may be stated as follows: Did the defendant in doing the alleged negligent act use that reasonable care and caution which an ordinarily prudent person would have used in the same situation? If not, then he is guilty of negligence. The law here in

[44] Sec. 282 (1934).
[45] Art. 1173.
[46] U.S. v. Juanillo, 23 Phil. 212 (1912); U.S. v. Barias, 23 Phil. 434 (1912); U.S. v. Reodique, 32 Phil. 458 (1915).
[47] Art. 1173.
[48] 37 Phil. 809, 813 (1918).

> effect adopts the standard supposed to be supplied by the imaginary conduct of the discrete *pater familias* of the Roman law. The existence of negligence in a given case is not determined by reference to the personal judgment of the actor in the situation before him. The law considers what would be reckless, blameworthy, or negligent in the man of ordinary intelligence and prudence and determines liability by that.
>
> "The question as to what would constitute the conduct of a prudent man in a given situation must of course be always determined in the light of human experience and in view of the facts involved in the particular case. Abstract speculation cannot here be of much value but this much can be profitably said: Reasonable men govern their conduct by the circumstances which are before them or known to them. They are not, and are not supposed to be, omniscient of the future. Hence they can be expected to take care only when there is something before them to suggest or ward off danger. Could a prudent man, in the case under consideration, foresee harm as a result of the course actually pursued? If so, it was the duty of the actor to take precaution to guard against that harm. Reasonable foresight of harm, followed by the ignoring of the suggestion born of this provision, is always necessary before negligence can be held to exist. Stated in these terms, the proper criterion for determining the existence of negligence in a given case is this: Conduct is said to be negligent when a prudent man in the position of the tortfeasor would have foreseen that an effect harmful to another was sufficiently probable to warrant his foregoing the conduct or guarding against its consequences."

As the language of the aforequoted decision makes obvious the standard of care required of a *bones pater familias* under the Civil Code is the counterpart of the conduct required of a "reasonable man of ordinary prudence" in American law, sometimes also referred to as a "man of average prudence," or a "man of ordinary sense using ordinary care and skill." The standard required of an individual is that of the supposed conduct, under similar circumstances, of a hypothetical person, the reasonable man of ordinary prudence, who represents a community ideal of reasonable behavior.[49]

Since the infinite permutation of situations which may arise make it impossible to fix specific or definite rules in advance for all conceivable human action, the law establishes then a standard that must "depend upon the circumstances." While the language of the decisions may give the impression that some special standard is being applied to each particular case, such as when a "higher degree of care" is spoken of,[50] all that is really meant is that the cir-

[49] PROSSER at 124.

[50] *E.g.* the case of Rakowski v. Raybestus — Manhattan, Inc., when it was held: "It is the general rule that the mere fact that an instrumentality may become dangerous to others does not constitute its possessor an insurer against injury that may result therefrom. Liability for negligence in respect

cumstances require somewhat greater precautions on the part of the defendant, but it is still the same standard, i.e. what the reasonably prudent man would do under the circumstances.

There is nothing in atomic energy which would result in the application of any different rules for the standard of care than the one followed with respect to other risks. The character of radioactive material, particularly as regards its potentiality for harm, does not seem to call for the application of any different rules concerning the required standard of conduct. In the case of risks connected with the operation of a nuclear reactor, where the danger of causing extensive damage is greater than in the other uses of atomic energy, extraordinary precautions will most likely be required. No definite forecast, however, can be made as to what these precautions will be so as to fulfill the necessary standard. Even the decided cases are of little help in this regard. Mostly, they have involved railroad crossing situations, automobile or pedestrian accidents, or electric power line injuries. The set of standards worked out in them involve situations having no direct or close application to reactor operations involving as it were complicated scientific and engineering aspects. Moreover, the cases find that either there was or there was no negligence simply on the basis of what the defendant did or did not do, without any real discussion of why the result was such, other than that the reasonably prudent man under the circumstances would or would not have acted the same way as the defendant.[51] What is merely clear from the cases is that what was held to be negligent conduct in any specific case will be held to be negligent again only if exactly the same set of circumstances arise. They do not supply the answer to the question whether or not a person's actions in a new situation meet the legal standard. Moreover, in the atomic energy field, the question of what activities meet the prescribed standard of care gets more involved by the fact that so many factors affect the safety aspects of a nuclear power reactor, such as the location of the reactor, meteorological conditions at the site chosen, safety devises built into the reactor and its housing, and reactor operating procedures. Would the requirement of conform-

---

to dangerous instrumentalities, as liability for negligence generally, arises from the failure to use due care. A *higher degree of care* is required in dealing with a dangerous agency than in the ordinary affairs of life or business which involve little or no risk. The law exacts of one who puts a force in motion that he shall control it with a skill and care *in proportion to the danger created* and with appliances which, in view of the circumstances, are reasonably safe. In other words, the essential requirement of due care under the circumstances necessarily implies that the care required to prevent injury to others in using a dangerous instrumentality is a *great or high degree* and every reasonable precaution suggested by experience and the known dangers of the subject ought to be taken." 5 N.Y. Super. 203, 207; 68 A. 2d 651 (1949).

[51] See, *e.g.* cases cited in note 34, *supra.*

ing to the conduct of the *bones pater familias* or the reasonable man of ordinary prudence extend to all these activities? If so, there would be many new situations never dealt with before by the courts in which the standard would have to be applied.

Assuming the application of the theory of negligence to liability for a nuclear incident, it is evident that a great deal of uncertainty faces the reactor operator or owner as regards what precautionary safety measures he must have to adopt to give him immunity from liability, and the injured public as well, with respect to what it must show was negligence on the part of the reactor or owner in the sense that the standard of conduct legally required in such circumstances was not satisfied. The problem is compounded by the fact that the technology of nuclear reactors is still in the process of development. Since one reactor is technically different from another reactor, no definite determination of the safety of any particular reactor can be made until after some time after it had been put into operation. If different owners or operators of two reactors of the same type observed the same degree of diligence, it is possible still that a nuclear incident may occur in one reactor whereas there may be none in the other. Thus the result may be that the public is unevenly protected.

It is fundamental that the standard of conduct which is the basis of the law of negligence be determined by balancing the risk, in the light of the social value of the interest threatened, and the probability and extent of the harm, against the value of the interest which the actor is seeking to protect, and the expedience of the course pursued.[52] Especially with the Government actively pursuing programs of development and utilization of atomic energy, the manner by which these interests should be mutually accommodated must be decided categorically by the enunciation of clear legislative policy. Leaving this area of uncertainty as is may well impede or obstruct the nation's objectives in the nuclear field.[53]

But the problem does not stop with formulation of a specific standard clearly applicable in the field of nuclear reactors. In the case of *Strong v. Iloilo — Negros Air Express Co.*,[54] involving an airplane accident, the following ruling was laid down which may well haunt the public finding itself under the shadow of a probable catastrophic nuclear incident:

> "Airplane companies are not required to exercise all the care, skill and diligence of which the human mind can conceive nor much as will free the transportation of passengers from all possible perils.

---

[52] Terry, *Negligence*, 29 Harv. L. Rev. 40, 42 (1915).

[53] See SUB-COMMITTEE ON LEGISLATION OF THE JOINT COMMITTEE ON ATOMIC ENERGY, 80th Cong., 1st Sess., SELECTED MATERIALS ON ATOMIC ENERGY INDEMNITY LEGISLATION 34 (St. Comm. Print 1965).

[54] G.R. No. 5455, Dec. 26, 1940, 40 O.G. Supp No. 12, 269, 273 (Nov., 1940).

> Passengers necessarily should take upon themselves all the usual and ordinary perils incident to airplane travel and if the carrier exercised all the care, skill and diligence required by law and that nevertheless the accident occurred, said carrier would not be responsible therefore. A carrier is not an insurer of the safety of its passengers and is not bound absolutely and at all events to carry them safely and without injury."

As was made clear under the foregoing decision, the consequence of the doctrine of negligence is that a defendant may escape liability if it is shown that he was not negligent, no matter how serious the results of the accident may be, thus leaving the victims unprotected. It may be argued, however, in attenuation of the harshness of the ruling in the case of air travel that any person intending to embark on a trip may at least secure personal insurance in anticipation of an accident. This cannot be said of potential victims of a nuclear incident, who may very well be oblivious of their exposure to any nuclear peril. If the incident were serious, causing injury to a vast segment of the population, it can be expected that the national atomic energy program will suffer a setback from a public reacting adversely.

Under the doctrine of negligence, it is very likely that, in the light of the potentiality of a nuclear power reactor causing extensive serious damage, an extraordinarily high degree of diligence or standard of care will be imposed. Thus it may be provided that it would be deemed want of due care not to exercise the utmost of safety measures regardless of expense or to the extent at least that they are economically feasible, or to fail to utilize the very latest technological and scientific knowledge and developments in the construction or operation of the reactor. In addition, stricter requirements may be imposed by requiring especial care in the giving of warnings of hazards and in disseminating information regarding protection against radiation hazards.[55] These requirements necessitate, however, the enactment of legislation expressly imposing them.[56] Still, even with the adoption by explicit legislation of an unusual degree of care, the shortcomings of negligence as a basis of liability, pointed out above, remain.

It does not also dispense with or lighten the further requirement of proof of negligence. The general rule in the Philippines, as well as in the United States,[57] is that one who imputes negligence

---

[55] For a detailed discussion of this subject see STATON, ESTEP & PIERCE, *op. cit. supra* note 31 at 105-162.

[56] The law expressly prescribes "extraordinary diligence" in the case of common carriers (Art. 1733, Civil Code), which is necessarily a stricter duty than the general standard of a "good father of a family" established in Art. 1173.

[57] PROSSER at 288.

to another must prove the negligence alleged. The following pertinent rulings taken in actions for negligence support this rule:

> "There was no need for the appellant to make an allegation to the effect that there was no negligence on its part with respect to the said fire, for the presumption is that every person is innocent of crime or wrong, and that he takes ordinary care of his own concerns."[58]
>
> "No evidence existing that the appellees were negligent... no case of actionable negligence has been established."[59]
>
> "The burden of proof always rests on one who seeks to recover damages on the ground of the alleged negligence of another. Before judgment for damages can be entered in such cases, the fact of negligence must be affirmatively established by competent evidence."[60]

The exception to the foregoing rule is when the law provides the contrary or when the law presumes negligence. Presumption of negligence arises in the case of a person driving a motor vehicle if he was violating any traffic regulation at the time of the mishap,[61] and also in the case of death or injury resulting from the defendant's possession of dangerous weapons or substances, such as firearms or poison, except when the possession or use thereof is indispensable in his occupation or business.[62] In both cases the presumption of negligence may be overcome by proof to the contrary.[63] It is also noteworthy that the presumption does not exist when the possession or use of dangerous substance is indispensable in the defendant's occupation or business. It will not apply therefore to a nuclear reactor operator with respect to radioactive materials, although the latter are highly dangerous substances.

Under the provisions of existing law on negligence the victims of a nuclear incident will have to prove that the incident was caused by the negligence of the reactor operator or owner or other person liable. A determination would have to be made whether the cause was a fault in design or in construction of the reactor or faulty functioning of a component or faulty operation of the reactor. Such requirement of proof of the cause of the incident is definitely unsatisfactory when applied to the circumstances of a nuclear incident. The claimant would have a practically impossible task of proving the defendant's fault or negligence when the pertinent evidence might have been destroyed by the incident itself. Even when there is no complete destruction, the intensely radioactive debris or remains of an "exploded" reactor would prevent or at best render

---

[58] Sociedad Dalisay v. de los Reyes, 55 Phil. 452 (1930).
[59] Sian, *et. al.* v. Lopez, G.R. No. 5389, Oct. 20, 1954.
[60] Barcelo v. Manila Electric Co., 29 Phil. 351 (1915).
[61] Art. 2184, 2185, Civil Code.
[62] *Id.* Art. 2188.
[63] *Ibid.*

difficult the examination of the reactor parts. Furthermore, the highly technical and complex evidence required to establish fault or negligence is peculiarly within the knowledge of the defendant and it would be unjust to compel the claimant to find and master it. Even where there is a presumption of negligence, the difficulty is not entirely eliminated since, in the event that the defendant was able to successfully overthrow the presumption, the plaintiff will still find himself under the necessity of rebutting the defendant's evidence that he was not negligent, by technical evidence which again lie peculiarly within the knowledge of the defendant.

Proximate cause or legal cause. —

As mentioned earlier, one of the elements of actionable negligence is a reasonably close causal connection between the wrongful act or omission and the resulting injury. This element is required for two reasons. Firstly, a person is liable only for the harm caused by his own conduct or the conduct of one for whom he is responsible. Secondly, a person shall be liable for damages only to the extent of the harm he has caused. The principal purpose of the law of compensatory damages is to require a wrongdoer to compensate his victim in an amount equivalent to the loss the former has inflicted on the latter. He should neither be liable for less nor for more. Considerations of justice and fairness limits one's liability for damages to the extent caused by his own acts or the acts of those for whom the law holds him responsible.[64]

The foregoing is commonly referred to as the question of proximate cause, although a more appropriate term would be "legal cause." The problem is many-faceted; it involves several distinct problems, more or less unrelated, to be determined upon different considerations. These problems may be generally classified into two broad categories: (a) the problem of causation in fact, and (b) the problem of limitation or the extent to which the defendant should be held liable for consequences traceable to his wrongful act or omission.[65] Only the first of these problems has anything whatever to do with factual relation of cause and effect. The treatment of the second in terms of causation is responsible for much of the existing confusion in the materials dealing with proximate cause.[66]

To be able to see clearly the effect of the doctrine of proximate cause on liability in the nuclear field, it will be helpful to consider the meaning and application of the doctrine.

---

[64] BALDERAMA, PHILIPPINE LAW ON TORTS AND DAMAGES 71 (1952).

[65] See GREEN, RATIONALE OF PROXIMATE CAUSE 77-121 (1929); Prosser, *Proximate Cause in California*, 38 CALIF. L. REV. 369 (1950).

[66] PROSSER at 257.

The discussion under the present heading is confined to the second problem. The question of causation in fact, particularly as regards proof of causation, together with the fourth element of actionable negligence, *viz.* compensable damages, shall be treated separately in this paper. The latter two problems, which are interrelated, would exist and would have to be met even if the principle of absolute liability were applicable. Some aspects of the question of proximate cause have been discussed above in connection with the element of duty of the defendant to conform to a certain standard of conduct for the protection of others against unreasonable risks.

In essence, "proximate" or "legal" cause is a delimitation of causation in fact. Once it is established that the defendant's conduct has, as a matter of fact, been one of the causes of the plaintiff's injury, the question arises whether it has been so significant and important a cause that the defendant should be legally responsible. This nature of the problem of proximate cause has been clearly explained thus:

> "Proximate cause — in itself an unfortunate term — is merely the limitation which the courts have placed upon the actor's responsibility for the consequences of his conduct. In a philosophical sense, the consequences of an act go forward to eternity, and the causes of events go back to the discovery of America and beyond. 'The fatal trespass done by Eve was cause of all our woe'. But any attempt to impose responsibility upon such a basis would result in infinite liability for all wrongful acts, and would 'set society on edge and fill the courts with endless litigation.' As a practical matter, legal responsibility must be limited to those causes which are so closely connected with the result and of such significance that the law is justified in imposing liability. Some boundary must be set to liability for the consequences of any act, upon the basis of some social idea of justice or policy."[67]

The use of the term "proximate cause" which is applied by the courts to those considerations which limit liability even when the fact of causation is clearly established, is indeed unfortunately misleading. Sometimes the problem is examined in the context of the question whether the interests of the plaintiff are specifically entitled to legal protection at the defendant's hands. The real basis of the decision here is the duty which the defendant owes, or does not owe, to the plaintiff to conform to a standard of conduct. The courts often have expressed this by saying that the defendant's conduct is or is not the proximate cause of the harm. This is common in these cases where the plaintiff was outside of the zone of any obvious danger and no harm to him was to be anticipated, such as

[67] *Id.* at 311.

when a fire set by the defendant spreads to an unusual distance. It also crops up in cases, such as those involving mental disturbance, when the court is in reality saying that the particular interest invaded is not entitled to legal redress. In all such cases, the causal connection between the act and the harm is usually clear and direct, and the attempt to view the matter through the mirror of causality only obscures the real issue.[68]

It is possible, and sometimes helpful, to state nearly every question that arises in connection with proximate cause in the form of a single question: was the defendant under a duty to protect the plaintiff against the event which did in fact occur?[69] Such a question directs attention to the extent of the original obligation and its continuance, rather than the sequence of events which has followed. In the ordinary use of the word by the courts, "duty" has been confined to the relationship between the defendant and the plaintiff which gives rise to the obligation and the ultimate consequences has been dealt with as "proximate cause." But the extent and limitation of such connection is almost always a matter of policy, of the end to be accomplished, which has nothing to do with causation. The problem for instance whether a defendant who was negligent should be held liable for consequences which could not have been anticipated in fact, involves in no way a question of causation and indeed does not arise until causation has been established. It involves rather considerations of policy of the law as to whether the defendant's responsibility should extend to such results. Viewed in this light, an accurate and proper definition of "proximate cause" or "legal cause" is that given as follows:

> "The term 'legal cause' is used to denote the fact that the sequence of events through which the actor's tortious act or omission has brought about (in fact caused) the harm which another has sustained is such as to make it just to hold the actor responsible therefore."[70]

In Philippine law, the requirement of proximate or legal cause is expressed in the following provisions:

> "When the plaintiff's own negligence was the immediate and proximate cause of his injury, he cannot recover damages. But if his negligence was only contributory, the immediate and proximate cause of the injury being the defendant's lack of due care, the plaintiff may recover damages. But the court shall mitigate the damages to be awarded."[71]
>
> "In crimes and quasi-delicts,[72] the defendant shall be liable for all damages which are the natural and probable consequences of the

---

[68] *Id.* at 253.
[69] GREEN, *op. cit. supra* note 65.
[70] HARPER & JAMES at 258.
[71] Civil Code Art. 2179
[72] Meaning actionable negligence, see note 32, *supra.*

> act or omission complained of. It is not necessary that such damages have been foreseen nor could have reasonably been foreseen by the defendant."[73]

Athough the use of the term to qualify liability of the defendant is somewhat indirect in the Civil Code, the doctrine of proximate cause is firmly established in the cases.[74] In one case,[75] the Philippine Supreme Court ruled that both the Spanish Civil Code and American law concepts of liability for damages in quasi-delicts are confined to those embraced within the meaning of proximate cause as the term is used in the Anglo-American concept of torts:

> "These authorities are sufficient to show that liability for acts ex-delito under the Civil Code is precisely that embraced within 'proximate cause' of the Anglo-American law of torts.
>
> "The general rule as frequently stated, is that in order that an act or omission may be the proximate cause of an injury, the injury must be the natural and probable consequences of the act or omission and such as might have been foreseen by an ordinarily responsible and prudent man, in the light of the attendant circumstances, as likely to result therefrom."

In the United States, liability of the defendant is often found with respect to the "natural and probable consequences" of his act. It has been said that the word "natural" must be intended to refer to consequences which are normal, not extraordinary, not surprising in the light of ordinary experience; while "probable," if it is to add anything to this, must refer to consequences which were to be anticipated at the time of the defendant's conduct. "Natural and probable" consequences, therefore, would appear to be those which are foreseeable, within the scope of the original risk, so that the likelihood of their occurrence was a factor in making the defendant negligent.[76] As thus defined, this test of liability has been subjected to severe criticism.[77]

It will be noted that while the term "natural and probable" consequences in American law denotes the foreseeability of the resulting damage, the Philippine Civil Code, while employing the very same phrase, expressly states that it is not necessary that "such damages have been foreseen by the defendant."[78] Ignoring

---

[73] Art. 2202, Civil Code.

[74] *Cf.* G.R. No. 10126, Oct. 22, 1957. Villanueva Vda. de Bataclan v. Medina, 54 O.G. 1805, (March, 1958); Taylor v. Manila Electric Co., 16 Phil. 8 (1910) Manila Electric Co. v. Remoquillo, 99 Phil. 117 (1956); Delgado Vda. de Gregorio v. Go Chong Bing, 102 Phil. 556 (1957).

[75] Algarra v. Sandejas, 27 Phil. 284 (1914).

[76] Bohlen, *The Probable or the Natural Consequences as the Test of Liability in Negligence*, 49 AM. L. REG. 79 (1901).

[77] Smith, *Legal Cause in Actions of Tort*, 25 HARV. L. REV. 103 (1911).

[78] This is a provision not found in the Spanish Civil Code which was in effect in the Philippines before the adoption of the Philippine Civil Code in 1950.

what is apparently a provision in contradiction of itself, it may appear (at first blush) that the rule in the United States on proximate cause is different from the rule obtaining in the Philippines.[79] On closer examination of the matter, however, this conclusion does not seem to be warranted. In the first place, the prevailing view in the United States applicable to unforeseeable consequences taken in this particular context holds the defendant liable for consequences directly caused by his negligence, although he could not have foreseen or anticipated them at the time. Direct consequences, in this sense, refers to consequences which follow in sequence from the effect of the defendant's conduct upon conditions existing and forces already in operation at the time, without the intervention of external forces which come into active operation later.[80] In the second place, although this United States rule speaks of "direct" consequences, the "natural and probable" consequences of the Philippine Civil Code have the same meaning in the light of the interpretation given to the provision of Article 2179, abovequoted which requires that an act or omission, in order to be a source of liability for negligence, should be "immediate and proximate." Both provisions being in *pari materia*, Articles 2179 and 2202 of the Civil Code ought to be construed together. In determining the meaning of proximate cause, Philippine courts have relied heavily on United States authorities. Thus the Philippine Supreme Court, citing *American Jurisprudence*,[81] explains proximate cause as follows:

> "The proximate cause of an injury is that cause, which, in natural and continuous sequence, unbroken by any efficient and intervening cause, produced the injury, and without which the result would not have occurred. And more comprehensively, 'the proximate legal cause is that acting first and producing the injury, either immediately or by setting other events in motion, all constituting a natural and continuous chain of events, each having a close casual connection with its predecessor, the final event in the chain immediately effecting the injury as a natural and probable result of the cause which first acted, under such circumstances that the person responsible for the first event should, as an ordinarily prudent and intelligent person, have reasonable ground to expect at the moment of his act or default that an injury to some person might probably result therefrom.' "[82]

The concept of proximate cause in the Philippines, therefore, is substantially the same as in the United States. Nonetheless, while in the latter jurisdiction, the scope of the problem of proxi-

---

[79] BALDERRAMA, *op. cit. supra* note 64 at 77, opining that the rules are different.

[80] PROSSER at 258-263.

[81] 38 AM. JUR. 695-696.

[82] G.R. No. 10126, Oct. 22, 1957, Villanueva Vda. de Bataclan v. Medina, 54 O.G. 1805, (March, 1958).

mate cause is seen as a much broader one, involving a series of problems,[83] in the Philippines it rests mainly on the question of intervening causes. Indeed, it has been pointed out that the chief use of the rule on "natural and probable" consequences is in those cases where intervening forces have come into active operation at a time subsequent to the defendant's conduct.[84]

A defendant of course will be liable for nuclear injuries that are "direct" or "natural and probable" consequences in the sense that these follow in sequence from the effect of the defendant's act upon conditions existing and forces already in operation at the time, without the intervention of any external forces which come into active operation later. When there is negligent operation of a nuclear reactor, for instance, at a time when strong winds were blowing, there is direct causation of any damage produced by radioactive materials thrown into the atmosphere by a nuclear incident and which such winds may have carried to any distance,[85] so long as new forces do not intervene.

The main concern in the field of nuclear reactor liability, however, would seem to lie with respect to the effect on liability of intervening causes." An intervening cause is one which actively operates in producing harm to another *after* the actor's negligent act or omission has been committed.[86] The independent causes which may intervene after the negligence of the defendant is an accomplished fact are without limit; as a practical matter responsibility simply cannot be carried to such lengths. The problem is to determine where "social idea of justice and policy" will set the demarcation line between those results with respect to which liability will arise and those with respect to which liability shall be deemed superseded. In general this has been determined by the criterion of whether the intervention of the other cause was a significant part of the hazard involved in the defendant's conduct, or was reasonably connected with it.[87]

Suppose that the negligence which produced the nuclear incident in a reactor was not in the operation of the reactor but in the design or construction which was sometime prior to the incident, and at the time of such incident there were strong winds, will there be liability for damage even if this occurred some distance away? Or would the winds be considered an "intervening force" which supervenes the defendant's liability?

There are certain rules on intervening causes that are quite settled. One rule is that if the intervening cause is one which in or-

---

[83] PROSSER at 252-258.
[84] *Id.* at 256.
[85] *Cf.* Burlington & M. R. Co. v. Westover, 4 Neb. 268 (1876).
[86] RESTATEMENT OF TORTS, Sec. 441 (1934).
[87] PROSSER at 267.

dinary human experience is reasonably to be anticipated, or one which the defendant has reason to anticipate under the particular circumstances, he may be negligent because he has failed to guard against it.[88] Thus, it has been held that a defendant is required to anticipate ordinary forces of nature, such as usual wind or rain.[89] In the above hypothetical case, the defendant will be held liable in case the wind was considered customary, usual or ordinary for the site of the reactor. It is important to note, however, that even though the intervening cause may be regarded as foreseeable, the defendant is not liable unless his conduct has created or increased an unreasonable risk of harm through its intervention;[90] in other words, he must be guilty of negligence in the first place. This would not be the case if the basis of the defendant's liability did not depend upon negligence.

Another rule applies to those intervening causes which could scarcely have been contemplated by the defendant at the time of his conduct, but which are nevertheless to be regarded as normal incidents of the risk he has created. Although courts insist on tacking on the label of foreseeability to cases involving such class of intervening causes, the actual rationale would be that they are still closely and reasonably associated with the immediate consequences of the defendant's act, and to that extent may be regarded as within the scope of the risk created.[91] This would seem to be the better justification for holding the defendant liable in the case of *Villanueva Vda. de Bataclan v. Medina*.[92] As a result of the negligence of the driver, a bus overturned on the road at night trapping inside a number of passengers. One of several strangers who came to rescue the victims carried a lighted bamboo torch which, coming into contact with leaking gasoline from the tank of the bus, started a fierce fire and burned to death the trapped passengers. Overruling the trial court which found for the defendant on the ground that the proximate cause of the death of the passengers was not the overturning of the bus but rather the fire which intervened to break the sequence of events, the Supreme Court held that, under the circumstances, gasoline leakage from the vehicle's tank was not unnatural or unexpected and that the coming of the rescuers with the torch was to be expected and was a natural sequence of the overturning of the bus, the trapping of its passengers, and the call for outside help.

---

[88] *Id.* at 268; *cf.* G.R. No. 44605, Oct. 23, 1937, Gaita v. Dy Pac & Co., 37 O.G. 2517 (Oct. 1939).

[89] Derry v. Flitner, 118 Mass. 131 (1875); Holter Hardware Co. v. Western Mortgage & W. T. Co., 51 Mont. 94, 149 P. 489 (1915); Long v. Crystal Refrigerator Co., 134 Neb. 44, 277 N. W. 830 (1938).

[90] Prosser at 270.

[91] *Ibid.*

[92] G.R. No. 10126, Oct. 22, 1957, 54 O.G. 1805, March, 1958.

Likewise of significance in radiation cases is the ruling that where, as a result of an injury, the plaintiff's weakened condition creates an especial susceptibility to disease such as pneumonia or tuberculosis, such condition will be regarded as a normal intervention.[93] Scientists generally agree today that exposure to significant amounts of radiation increases a person's general susceptibility to diseases to which he may thereafter be exposed. The question, however, is whether the foregoing rule applies even where the radiation exposure does not result in any traumatic injury.

Lastly, the defendant will ordinarily be relieved of liability by an unforeseeable and abnormal intervening cause which produces a result which could not have been foreseen,[94] for he is simply not negligent. It is here at least that the line must of necessity be drawn to terminate the defendant's responsibility. Invariably this situation does not present an issue of causation in fact, since the defendant has created a situation acted upon by another force to bring about the result; and to deal with them in terms of "proximate cause" is only to obscure the real issue. The question is one of negligence and the extent of the obligation: whether the defendant's responsibility extends to such interventions, which are foreign to the risk he has created.[95]

Underlying the philosophy behind the development of the proximate cause doctrine is the recognition of the necessity to establish some limit on the nature and type of consequences traceable to the act or omission of a person and for which he shall be held responsible. The problem is not one of causation, which must indeed be established first before any question of liability arises, but rather of the policy as to imposing legal responsibility. Even where the principle of strict or absolute liability is applied such policy determination would have to be made. To make a reactor enterpreneur responsible for every single consequence of his conduct in carrying out his nuclear activity no matter how remote or indirect, will only certainly impede the manifest social policy of encouraging the peaceful use of atomic energy. Evidently some limit must have to be made. The enactment of some legislation will be necessary, whether the principle adopted is strict liability or negligence. In the enactment of such legislation it would be advisable to avoid the confusing and obscuring language now found in judicial decisions applying proximate cause, by not losing sight

[93] Anderson v. Anderson, 188 Minn. 602, 248 N. W. 35 (1933); Wallace v. Ludwig, 292 Mass. 251, 198 N. E. 159 (1935); see RESTATEMENT OF TORTS, Sec. 458.

[94] PROSSER at 277; *Gaita v. Dy Pac & Co.*, 37 O.G. 2517 (1939).

[95] See Campbell, Duty, Fault and Legal Cause, WIS. L. REV. 402 (1938); Gabeto v. Araneta, 42 Phil. 252 (1927).

of the actual practical function and reason for the existence of the doctrine.

The doctrine of "res ipsa loquitur."—

To complete the consideration of negligence as a basis of liability, the rule of *res ipsa loquitur* should be considered, however briefly. The rule creates an exception to the general rule that negligence is not to be presumed, but must be affirmatively proved. It may therefore attenuate, to a certain extent at least, the difficulty facing a victim of radiation injury of establishing by competent evidence the negligence of the defendant.

The use of the *res ipsa loquitur* rule in the Philippines is uncertain. There is no provision of Philippine law embodying the rule. Diligent search has yielded no decision adopting the rule but, on the other hand, it cannot be stated that *res ipsa loquitur* is rejected in this jurisdiction. There is one case[96] at least, where the rule was invoked, wherein the Supreme Court refused to apply *res ipsa loquitur* on the ground that it was not warranted by the circumstances, the implication being, apparently, that the rule may be available in the proper case.

The doctrine of *res ipsa loquitur* is that when a thing which causes injury, without the fault of the injured party, is shown to be under the exclusive control of the defendant, and the injury is such that, in the ordinary course of things, it does not occur if the one having such control was using proper care, it affords reasonable evidence, in the absence of an explanation, that the injury arose from the defendant's want of care.[97] It creates an inference of negligence.[98] *Res ipsa loquitur,* however, is restricted in its operation by certain conditions. For purposes of this paper it is important to note only the conditions precedent that, for an accident to speak for itself, it must be of such nature that normally it does not occur without negligence and it must arise from a force or instrumentality controlled by the defendant.[99] Establishing these requirements for the application of *res ipsa loquitur* may frequently be almost as dif-

[96] Strong v. Iloilo-Negros Air Express Co., G.R. No. 5455 Dec. 26, 1940 40 O.G. Supp. No. 12, 269 (Nov., 1941).

[97] San Juan Light & Transit Co v. Requena, 224 U.S. 89; 56 L. Ed. 680 32 S. Ct. 399 (1911).

[98] There is much disagreement in the United States as regards the proper procedural effect of *res ipsa loquitur.* The great majority of the American courts regard it as nothing more than one form of circumstantial evidence, creating an inference of negligence which in the ordinary case the jury (or judge) may or may not accept. A minority of the courts, however, have given *res ipsa loquitur* a greater effect than that of a mere permissible inference from the evidence. They have held that it creates a presumption, which always requires a directed verdict for the plaintiff if the defendant offers no evidence to meet it. PROSSER at 211-212.

[99] *Id.* at 199-211.

ficult as establishing negligence directly; but, in the usual case, the plaintiff's burden of showing negligence is substantially lessened by resort to the doctrine, and it may ferret out of the defendant, who may be obligated to present rebutting evidence, some leads as to the cause of the accident.

The first condition precedent concerning the nature of the accident has been expressed in the following terms; "The requirement that the occurence be one which ordinarily does not happen without negligence is of course only another way of stating a principle of circumstantial evidence, that the accident must be such that in the light of ordinary experience it gives rise to an inference that some one has been negligent."[100] There are certain types of accidents where the inference of fault or negligence as a cause may easily arise, such as where impurities are found in a food product. In the other hand, some accidents, such as a skidding car, do not in or by themselves indicate the presence of negligence, and with respect to which — absent evidence to the contrary of course — the degree of probability that they happen due to negligence is just as much as that they took place because of non-negligent causes. Nevertheless, in many instances, the decision whether *res ipsa loquitur* is appropriate is of the "borderline" variety, ultimately turning on the subjective process of weighing the various possible causes of the accident.

The problem with respect to a nuclear incident in a nuclear power reactor is whether it may be reasonably inferred that the nature of reactor nuclear incidents is such that they do not happen without the agency of fault or negligence. It is doubted whether *res ipsa loquitur* may be justified in this field since there are still gaps in scientific knowledge about atomic energy, the technology is still in the development phase and, therefore, the present state of the art precludes any certainty that present precautionary measures and devices completely eliminate nuclear risks.

Where the activity involves highly complex scientific and technological processes, like atomic energy, expert testimony would naturally be very important in determining whether it was "more probable than not" that someone's negligence was a proximate cause of the accident. In addition, the question of probability is further affected by a considerable number of peripheral factors not involving the immediate circumstances of the accident. The safety record of an industry may be one such relevant criterion. The remarkable safety record of atomic industrial plants,[101] which may be used to support the proposition that accidents do not happen to well-run

[100] *Id.* at 202.

[101] See Smets, *Review of Nuclear Incidents*, in PROGRESS IN NUCLEAR ENERGY, 3 LAW AND ADMINISTRATION 89 (Weinstein ed. 1962).

reactors, may be strongly persuasive of the applicability of *res ipsa loquitur*. The difficulty of the application of the rule here, however, is that it does not necessarily pinpoint liability to the reactor operator. As it was pointed out, such accidents could clearly also happen if the reactor were not well made; therefore, the inference that an accident is due to a defect seems, in the absence of evidence, at least as probable as the inference of negligent operation.[102] The fact that a reactor was not well made would be hard to attribute to the operator's negligence, unless the reactor operator is to be held to vicarious liability for the negligence of all the firms that designed or constructed the reactor or supplied the components for it. This would appear to go beyond existing law.[103]

The application of *res ipsa loquitur* to atomic energy may very well run the same course it went through with respect to the aviation industry. While in the early cases the courts held *res ipsa loquitur* inapplicable to aircraft accidents, the trend today is towards acceptance of the view that this type of accident is appropriate for imposition of the rule.[104] What was said in the Philippine case of *Strong v. Iloilo-Negros Air Express, Co.*[105] when aviation was in its early phase may well apply at present to the power reactor industry. The motors of one of the defendant's aircraft dedicated to passenger and commercial air travel went dead while on flight, as a result of which the aircraft plunged into the sea. In an action to recover damages for personal injury suffered in the accident, the plaintiff advanced the argument that independently of proof as to the negligence of the defendant, the latter should be held negligent under the rule of *res ipsa loquitur*. In rejecting plaintiff's contention, the Supreme Court held:

> "We believe that this principle (of *res ipsa loquitur*) does not govern the instant controversy, because one of the conditions for its application has not been established, there being no proof — and our knowledge does not warrant the finding — that according to the general experience of mankind the accident does not usually occur without negligence upon those in control."

It is very much possible that the same rule will be applied to reactor accidents, since the present stage of power reactor development is comparable to the aviation industry at the time that the above case was decided.

---

[102] Cavers, *Improving Financial Protection of the Public Against the Hazards of Nuclear Power*, 77 HARV. L. REV. 655-656 (1964).

[103] *Ibid.*

[104] See McLarty, *Res Ipsa Loquitur in Airline Passenger Litigation*, 37 VA. L. REV. 55 (1951); Goldin, *The Doctrine of Res Ipsa Loquitur in Aviation Law*, 18 So. CAL. L. REV. 15 (1944).

[105] G.R. No. 4555, Dec. 26, 1940, 40 O. G. Supp. No. 12, 269 (Nov., 1941).

The second condition precedent for the application of the *res ipsa loquitur* rule is that the instrument be in defendant's control at the time of injury. In the development of the rule, there has been a relaxation of the concept of physical control on the part of the defendant at the time of the accident, and the scope of the rule's operation has been extended even to cases where the defendant had already relinquished physical control over the instrumentality long before the accident takes place. The favorite illustration of such extension are the "exploding bottle" cases. It is now generally held that the second prerequisite would be satisfied if the defendant, or one for whose acts the defendant is legally responsible, had dominion over the instrumentality at the time when, more probably than not, the negligent act took place.[106] One expression of this condition precedent, which is gaining favor, is that the "apparent cause of the accident must be such that the defendant would be responsible for any negligence connected with it."[107]

Implicit in what has been said in the foregoing is a further aspect of this second condition for the application of *res ipsa loquitur*, namely, the requirement of exclusivity. The control over the harmful instrumentality by the defendant must be such that the likelihood of other causes having produced the accident must be so reduced that "the greater probability lies at defendant's door."[108] The issue here is probable causation in fact, or stated more specifically, whether the defendant is the person to be held liable because he is most probably the cause in fact of the accident.[109]

This particular requirement may constitute an obstacle to the application of *res ipsa loquitur* to the operation of a power reactor. The inapproriateness of the rule when applied to responsibility of suppliers and designers of atomic reactors has been pointed out thus:

> "Plaintiffs seeking to use *res ipsa* to hold suppliers and designers liable without evidence of negligence would be in difficulty if they could not identify any particular component or aspect of the design as the cause of the incident, since suppliers and designers are scarcely to be held to collective liability. However, even if a particular component were shown to have given way, the plaintiffs would still have trouble in invoking *res ipsa* to hold its maker liable. This is because of the so-called 'exclusive control' rule which, while generally not applied rigidly to require that the defendant has been in exclusive control of the item at the time of the injury, does require that no one having control over the item in question

---

[106] E.g., Escola v. Coca Cola Bottling Co. of Fresno, 24 Cal. 2d. 453, 150 P. 2d 436 (1944); Zentz v. Coca Cola Bottling Co. of Fresno, 39 Cal. 2d 436, 247 P. 2d 344 (1952).

[107] PROSSER at 206.

[108] HARPER & JAMES at 1086.

[109] See STASON, ESTEP & PIERCE at 536, 540.

> after the defendant could reasonably be assumed to have affected its condition in ways relevant to that plaintiff's claim. Such proof would not be easy to furnish. While, to be sure, the reactor and many of its parts are so located as not to be touched by the reactor staff, the way the reactor was operated would, in various situations, affect their condition adversely."[110]

The fact that there are many sources of radiation to which a person may be exposed plus the cumulative effect to radiation exposure underscores further the difficulty of satisfying the "most probable causation in fact" aspect of the requirements of *res ipsa loquitur* and the inadvisability of applying the rule. Even if the plaintiff is injured under circumstances making it probable that negligence was the cause of the accident, there may be more than one possible source of the negligence and more than one defendant possibly responsible for several sources. If it cannot be shown that the injury resulted "more probably" from any single defendant's negligence, which may indeed be most difficult to prove, the rule of *res ipsa loquitur* will be unavailable to the plaintiff since its application is predicated on the assumption that *at least* it is more probable than not that the defendant was responsible. This would be especially so where the multiple defendants were operating independently and there is no collective responsibility among themselves.[111] True, in the case of *Litzmann v. Humboldt County*,[112] the rule was extended to such a situation. There, a nine-year old child sustained injuries from an aerial bomb which exploded after he found it on some fairgrounds. There were two companies located on the fairgrounds who owned and had used such bombs, but there was no evidence indicating that one company more probably than the other was the source of the particular offending bomb. The companies were entirely independent of one another. There was no basis by which they could be held to collective responsibility. *Res ipsa loquitur* was held to apply even though it was clear that one of the defendants was entirely innocent.

There are perhaps several arguments that may be advanced to justify the "justness" of the foregoing result. One of this is the extension of the view of "special responsibility for the plaintiff's safety undertaken by everyone concerned."[113] This would mean that the possessor of any unusually hazardous instrumentality would run the risk of the imposition of *res ipsa loquitur* against him any time the plaintiff sustains injuries for which his instrumentality *might* have

---

[110] Cavers, *op. cit. supra* note 102 at 656.

[111] Compare Ybarra v. Spangard, 25 Cal. 2d 486, 154 P. 2d 687 (1944) (*res ipsa loquitur* applied with respect to several defendants engaged in cooperative undertaking or with conscious unity of purpose).

[112] 273 P. 2d 82 (Cal. App. 1954).

[113] Posited by Prosser, PROSSER at 208.

been the cause. Such a broad application of the doctrine appears unwarranted Another argument may be based on the fact that probable responsibility exists with respect to only *two* defendants, one of whom clearly was negligent, the other of whom clearly was innocent. In other words the probability of one or the other being the responsible negligent person was equal. If the probabilities are only a guess in a close case anyway, why not extend such process of reasoning to the case where it is certain the probabilities are equal? The trouble with these arguments is that they disregard the basic justification for the use in the first place of the *res ipsa loquitur* doctrine, which is the fact that, absent any evidence to the contrary, the responsible cause of the accident can be reasonably imputed to a particular defendant. Besides, the above reasoning certainly cannot apply to cases involving not two defendants but more, say six or eight, only one of whom is negligent and none of whom is connected in any way with his fellow defendants.

The Litzmann-type reasoning has been strongly criticized, and the condemnation of any attempt to stretch in that wise the second *res ipsa loquitur* requirement as being "dangerous and improper"[114] is richly deserved.

B. Strict Liability as the Basis for Responsibility

As previously noted[115] the pendulum of jurisprudential development is now swinging once more in another direction, a movement from the side of limiting tort liability to acts involving fault of the defendant, towards the direction of developing a policy of imposing liability without regard to such fault. This is especially the case when injuries arise out of activities involving unusual danger to persons and property in the community. The imposition of such liability is justified by the view that the defendant's enterprise, while it will be permitted by the law, must have to pay its way.[116] The social expediency of this development in the law has been explained in the following manner:

> "There is a growing belief, however, that in this mechanical age the victims of accidents can, as a class, ill afford to bear the loss; that the social consequences of uncompensated loss are of far greater importance than the amount of the loss itself; and that better results will come from distributing such losses among all the beneficiaries of the mechanical process than by letting compensation turn upon an inquiry into fault."[117]

The problem is dealt with as one of allocating a more or less inevitable loss to be charged against a complex and dangerous civiliza-

---

[114] STASON, ESTEP & PIERCE at 545-547.
[115] See text following note, *supra* 15.
[116] See EHRENZWEIG, NEGLIGENCE WITHOUT FAULT (1951).
[117] 2 HARPER & JAMES at 784-795 (1956).

tion, and liability is placed upon the party best able to shoulder it.[118] In brief, strict liability proceeds upon the theory that he who engages in an unusually hazardous activity must bear responsibility for the risks he thereby creates. It is the doctrine which affords the greatest protection to a comparatively helpless public. It is peculiarly suited to the present stage of nuclear development when scientific knowledge of nuclear processses may not be sufficient to assure or enable the development of completely effective safety measures and devices.[119]

Although tort liability is basically predicated upon proof of fault as stated much earlier, stricter standards have been developed either by legislation or judicial decision in most legal systems, including the Philippines, in at least certain areas of activity.

The doctrine of absolute liability or, as it is sometimes called, liability without fault, has played a more or less prominent role in the common law since 1868. The doctrine derives from the English decision of *Rylands v. Fletcher*[120] which ruled that a person is strictly liable for injuries done by substances collected on and escaping from his land, if the collection represents a "non-natural" use of the land. The case involved the owner of a reservoir which leaked and discharged water to the damage of adjoining premises. There is much uncertainty as to the application of the doctrine to the other situations. In the comparatively recent case of *Read v. Lyons and Company, Ltd.*,[121] the issue was whether the operator of a munitions factory was liable to one of those working in that factory who was injured in the factory itself by an explosion occurring there without any negligence on the part of the operator or his servants. The House of Lords resolved the issue in the negative, stating that "the fact that the work that was being carried on was of a kind which requires special care is a reason why the standard of care should be high, but it is no reason for saying that the occupier is liable for resulting damage to an invitee without any proof of negligence at all."[122] It held the *Rylands* ruling inapplicable because that was restricted to a situation where, in addition to a "non-natural" use of land, there is an "escape" of the dangerous thing from the land on which it is kept and a "passing" to other land where the damage is caused.

---

[118] See Pound, *The End of Law as Developed in Legal Rules and Doctrines*, 27 HARV. L. REV. 233 (1914); Feezer, *Capacity to Bear Loss as a Factor in the Decision of Certain Types of Tort Cases*, 78 U. PA. L. REV. (1930).

[119] HARVARD LAW SCHOOL, INTERNATIONAL PROBLEMS OF FINANCIAL PROTECTION AGAINST NUCLEAR RISK 10 (Atomic Industrial Forum, Inc. 1959).

[120] L. R. 3 H. L. 330 (1968).

[121] 2 All E. R. 471 (1946).

[122] *Id.* at 473 (Viscount Simon).

In the United States, *Rylands v. Fletcher* has been accepted by some courts and rejected by others.[123] But the principle of absolute liability appears to have been strengthened by the formulation of the theory of "ultrahazardous activity." Under this theory, one who carries on an ultrahazardous activity (i.e. an activity which necessarily involves a risk of serious harm to the person or property of others that cannot be eliminated by the exercise of utmost care and which is not a matter of common usage) is liable to another person whom the person carrying on the activity should recognize as likely to be harmed by unpreventable miscarriage of the ultraharzardous activity. Such liability exists although the harm is caused by a third person or by the force of nature.[124] Other theories often cited as providing a basis for liability even without fault are "trespass" and "nuisance." The extent to which any of the foregoing doctrines may be available or applied, and the defenses which might be permitted by the courts to preclude recovery under them are clouded in doubt. For this reason, they are unreliable and undesirable in so far as resort to them is made for liability in connection with nuclear installations.[125]

In civil law countries, the primary basis for attaching tort liability is the concept of fault or negligence. However, the principle of liability without fault was no complete stranger even to the Roman law, which contained exceptions to the classic theory it had founded, tending towards or imposing strict liability.[126] Modern jurisprudence shows the unmistakable encroachment into this general rule of civil law of the notion of liability without fault. Legislative adoption of the doctrine of strict liability became marked with respect to industrial enterprises.[127] The most spectacular non-legislative move, in the civil law jurisdiction, in tort liability, is said to be the judicial attempt in France, toward the end of the 19th century, to read into that article of the Civil Code which imposes liability for damage "caused through things one has in his custody," a general principle of strict liability for things that "create a risk." The French courts in a long line of decisions eventually laid down the rule that the person (or enterprise) who has custody of a thing (dangerous or not) which produces injury or damage owes reparation, unless he can prove that the damage was caused neither by his fault nor by a defect of the thing.[128] This jurisprudential development, with the doctrinal discussions which went with it, was

---

[123] For a detailed discussion of the status of Rylands v. Fletcher in American Law, see STASON, ESTEP & PIERCE, at 646-663.

[124] RESTATEMENT OF TORTS, Secs. 519-524 (1938).

[125] See Cavers, *op. cit. supra* note 102 at 651-656.

[126] See LAWSON, NEGLIGENCE IN THE CIVIL LAW 43 (1950).

[127] HARVARD, *op. cit. supra* note 122 at 23.

[128] *Ibid.*

closely followed by other civil law countries, particularly, in those which have the same codal provision.[129] It may be stated generally that in the Continental civil law system, strict liability is imposed, by one device or the other, for the operation of dangerous things.[130]

In Japan, where the negligence rule prevails, it is interesting to note that the principle of strict liability was being considered as early as 1912, and the courts tend toward the same direction.[131] In one case, involving the damage of crops in the neighborhood of a sulphurous acid factory by sulphurous acid gas coming out of its chimneys, the court held that the defendant factory was guilty of negligence in letting the gas escape high into the air even though they had taken precautions according to the nature of the enterprise. This precedent has been repeatedly followed by Japanese courts with the result, so it is said, that in Japan they have an established body of case law equivalent to *Rylands v. Fletcher*.[132]

The Philippines adheres to the classical and traditional civil law principle that there can be no liability without fault or negligence. It has recognized exceptions, however, in favor of strict liability. The latter principle is well established in the Workmen's Compensation Act,[133] where it is the basis of liability.[134] Its application in the field of torts is very much restricted.[135]

Subject to absolute liability is the possessor of an animal or those who may make use of the animal, for any damage that it may cause even if it may have escaped or may have been lost.[136] The liability arises even without the knowledge of the possessor or user.[137] The only defenses to such liability are *force majeure* or the damage having resulted from the fault of the person harmed.[138] Also, the law makes no distinction whether the animal is ferocious or tame.[139]

---

[129] See Fisherof, *International Problems of Tort Liability and Financial Protection Arising Out of the Use of Atomic Energy* 2-5 (1958); Pehrsson, *International Problems of Tort Liability and Finacial Protection Arising Out of the Use of Atomic Energy* (Sweden) 1-33 (1958); Lesigang, *An Essay on the Liability for Damages Caused By Use of Atomic Power* 2 (1958).

[130] HARVARD, *op. cit. supra* note 122 at 23.

[131] Naritomi, *International Problems of Tort Liability and Financial Protection Arising out of the Use of Atomic Energy: Japan* 2 (1958).

[132] *Ibid.*

[133] Act No. 3428.

[134] Enciso v. Dy-Liaco, 57 Phil. 446 (1932); Estandarte v. Phil. Motor Corporation G.R. Nos. 39722 — 38724, Nov. 1, 1933; Murillo v. Mendoza, 66 Phil. 689 (1938).

[135] The very few provisions of law imposing liability without fault are new, that is they have been adopted for the first time in the Philippines with their inclusion in the Civil Code of the Philippines of 1950.

[136] Art. 2183, Civil Code.

[137] Afialda v. Hisole, G.R. No. 2075, Nov. 29, 1949.

[138] Derifas v. Escano, G.R. 6231, Dec. 19, 1940, 40 O.G. Supp. No. 12. 252 (Nov., 1941).

[139] JARENCIO, PHILIPPINE LAW ON TORTS AND DAMAGES 95 (1964).

Likewise, absolute or strict liability arises against the owner of trees situated at or near highways or lanes, for damages they cause when they fall, except only when their fall is caused by *force majeure*.[140]

Manufacturers and processors of foodstuffs, drinks, toilet articles and similar goods are liable for death or injuries caused by any noxious or harmful substances used, although no contractual relation exists between them and the consumers.[141] The law does not expressly impose strict liability, although the intention to do so is clear. If there were no such intention, the liability of manufacturers or processors of food, drinks, etc. for fault or negligence would have been covered under the general provision of Article 2176 providing that whoever by act or omission causes damage to another, there being fault or negligence, is obliged to pay for the damage done. Article 2176, according to its own terms, is precisely applicable to parties not having any pre-existing contractual relation between them. The fact that the liability of the above specified manufacturers and processors is treated in a separate article without qualifying such liability with fault or negligence, clearly points to an intent to hold them liable without fault or negligence. What is more the rule in the article under consideration was apparently taken from the statutory rule prevailing in the United States, which makes the manufacturer or seller of defective food or other goods involving a considerable risk to the public, liable to the injured consumer, even though he has used reasonable care.[142] In any event, the provision applies to the type of goods specifically enumerated and *similar* goods.

There is no development in the Philippines of the doctrine of strict liability comparable to or even approaching, one may say, the fringes of the doctrine in *Rylands v. Fletcher*,[143] or that of ultra-hazardous activity of the Restatement of Torts.[144] There is a presumption of negligence on the part of the defendant if death or injury results from his possession of "dangerous weapons or substances, such as firearms and poison."[145] The application of this provision, however, is very much restricted. Apart from the question as to what "dangerous substances" would include, the provision gives rise only to a disputable presumption of negligence and such presumption does not arise at all in the case where the "possession or use thereof is indispensable in his occupation or business."[146]

---

[140] Art. 2191 (3), Civil Code.
[141] *Id.* Art. 2187.
[142] See PROSSER at 345, 348.
[143] See *supra* note 233.
[144] See *supra* note 127.
[145] Art. 2188, Civil Code.
[146] *Ibid.*

Proprietors are held responsible for damages caused by the explosion of machinery and the inflammation of explosive substances but again responsibility is predicated on want of due care.[147]

It may be that with respect to highly hazardous activities the defendant will be held to a stricter standard of care.[148] This follows from the rule that the negligence of the defendant consists in the "omission of that diligence which is required by the nature of the obligation and corresponds with the circumstances of the persons, of the time and of the place."[149] The shortcomings even of the requirement of a high degree of diligence has been pointed out here earlier.[150] It hardly yields the advantages that strict liability would hand over.

Even in countries the legal systems of which already contain principles of law which may likely hold the operators of nuclear installations to something approaching strict liability, the need is strongly felt nevertheless for special legislation specifically dealing with the distinct problems of atomic energy. Such special legislation has already been adopted in the United States,[151] the United Kingdom,[152] Sweden,[153] Switzerland,[154] the Federal Republic of Germany,[155] Belgium,[156] and Japan.[157] In addition, three international conventions have been elaborated specifically in this area: The Convention on Third Party Liability in the field of Nuclear Energy of the Organization for Economic Cooperation and Development (OECD),[158] also known as the Paris Convention; the Vienna Convention on Civil Liability for Nuclear Damage[159] and the Brussels

---

147 Art. 2191 (1), Civil Code.

148 U. S. v. Juanillo, 23 Phil. 212 (1912); U. S. v. Barias, 23 Phil. 434 (1912); U. S. v. Reodique, 32 Phil. 458 (1915).

149 Art. 1173, Civil Code.

150 See *supra* pp. 28-32.

151 68 Stat. 919 (Atomic Energy Act 1954); 42 U.S.C. Ch. 23 (1958 Supp.).

152 *Nuclear Installations (Licensing and Insurance) Act*, 1965, Eliz. 2, 1965, Ch. 6, reprinted in SUB-COMMITTEE ON LEGISLATION OF THE JOINT COMMITTEE ON ATOMIC ENERGY, 80th Cong., 1st Sess., SELECTED MATERIALS ON ATOMIC ENERGY INDEMNITY LEGISLATION 345-384 (Jt. Comm. Print 1965), hereinafter cited as JCAE SELECTED MATERIALS.

153 *Act on Compensation for Damage Caused by the Operation of Nuclear Reactors (Nuclear Liability Act)*, June 3, 1960, reprinted as translated in JCAE SELECTED MATERIALS 395-400.

154 *Federal Act on the Peaceful Uses of Atomic Energy and Protection Against Radiations of December* 23, 1959, reprinted as translated in JCAE SELECTED MATERIALS 401-416.

155 *Act on the Peaceful Use of Atomic Energy and Protection against its Hazards of December* 23, 1959, as amended, reprinted as translated in JCAE SELECTED MATERIALS 417-442.

156 Law of July 27, 1962, reprinted in PIERARD, RESPONSABILITE CIVILE: ENERGIE ATOMIQUE ET DROIT COMPARE 237-40 (1963).

157 *The Law on Compensation for Nuclear Damage* (Law No. 147 of 1961), reprinted as translated in JCAE SELECTED MATERIALS 385-394.

158 For text see PROGRESS IN NUCLEAR ENERGY 351-74.

159 IAEA Document CN — 12/46 (May 20, 1963).

Convention on Liability of Operators of Nuclear Ships.[160] Of these treaties, the Vienna Convention bears practical importance to the Philippines. The Philippines is a signatory of the Convention and is currently considering its ratification.

With the notable exception of United States law, all these national enactments and treaties have adopted the doctrine of strict liability. It is particularly noteworthy that the United Kingdom in whose jurisdiction was born the doctrine of *Rylands v. Fletcher*, saw fit to pass legislation making, *inter alia*, the United Kingdom Atomic Energy Authority and privately owned enterprises absolutely liable for radiation injuries.[161] In the United States, the Price-Anderson Act[162] provides for a system of financial protection against nuclear damage through the device of private insurance and government indemnity, but the principles of liability are left to be determined by the law of the states in which nuclear damage was suffered. The latter feature has been roundly criticized and the incorporation of absolute liability into the federal law strongly advocated.[163]

Strict or absolute liability has several substantial advantages which make it eminently appropriate for liability in connection with the operation and use of nuclear installations. This principle dispenses with the plaintiff's obligation to prove negligence in order to be awarded damages. If a major nuclear incident should occur, much of the relevant evidence may be destroyed. Even discounting the destruction of evidence, proof of negligence will be exceedingly difficult at best. This is especially so in the case of nuclear installations where the highly complex scientific and technical processes of a power reactor peculiarly lie indeed within the knowledge of the defendant. Even if we were to presume that there is no uncertainty regarding the availability of the rule of *res ipsa loquitur* and other procedural devices giving rise to a presumption of negligence, so that it is the plaintiff who has to prove that he has taken all measures reasonably calculated to prevent injury, the problem would still be there. Regardless of who has the burden of proof, it will generally be very difficult for counsel and the regular courts to understand fully the intricate technical background in which negligence or absence of negligence must be found.

---

[160] For the text see 57 Am. J. Int'l. L. 268 (1963).

[161] See Sec. 5(3), *Nuclear Installations (Licensing and Insurance) Act, supra* note 156, and Secs. 1(1) and 4(1) (2) (3), *Nuclear Installations (Amendment) Act, supra* note 156.

[162] 71 Stat. 576 (1957); 42 U.S.C.A. Secs. 2014, 2210 (Supp. IV, 1963).

[163] For an excellent advocacy of the adoption in the United States of the principle of strict liability by means of a federal statutory provision, see Cavers, *op. cit. supra* note 102.

There appears to be even greater justification for making liability absolute if in the legal scheme of financial protection for nuclear activity, a maximum amount of liability is established and such limit is pegged to the amount of insurance which the industry can obtain at reasonable cost whether with or without supplemental government indemnity. In this case it would only be reasonable to expect industry to bear the cost of insuring against the hazards it creates.

Finally, the argument for strictly holding the defendant to liability in the nuclear field becomes more persuasive considering mankind's relatively short experience with nuclear power installations which leaves us with much less than complete assurance that nuclear incidents will not happen with the observance of utmost care.

The adoption of strict liability for nuclear installations will flow with the present current of jural development which is to treat the risks concommitant to an advancing industrial age as a cost of the enterprise that create them and spreading such cost, through the system usually of insurance, over the whole community.

II. A LEGAL SCHEME FOR FINANCIAL PROTECTION

In the preceding pages, we discussed the appropriateness of using either the doctrine of negligence or of strict liability as the basis for responsibility to compensate nuclear damage arising out of nuclear power installations. The need for legislation covering the problems connected with nuclear risks does not stop with the establishment of an appropriate theory of liability but extends to other areas of the broad question of liability. These aspects, including that of the theory of liability, of the general problem of liability are closely interwoven and the shape and substance of any of these parts will necessarily affect the entire cut of the pattern of financial solution applied to nuclear risks. Verbalizing it in the broadest term, the objective of any such scheme is to provide adequate compensatory protection to the public and yet relieve the nuclear industry of intolerable liability so as to achieve an optimum climate that would foster the development and use of atomic energy.

The criteria of an adequate solution to the problem of nuclear liability has been presented as follows:[164]

> (1) The operator of a nuclear facility should be liable to the public for injuries caused by that facility. To minimize the public's

[164] Not included are those criteria dealing with problems of administrative control and regulation and with problems of conflict of laws, matters with which this paper is not concerned.

> difficulties of proof and to assure it maximum protection, the operator's liability should be absolute, irrespective of whether he or anyone else was negligent. He should be fully exonerated only for accidents caused by acts of war, and he should be partially exonerated only by the contributory negligence of the person seeking recovery. (2) At least where the operator is not the state itself, the operator's aggregate liability should be limited in amount to a sum for which he can obtain financial protection by private or public insurance or guaranty. Except in the case of small research reactors, however, the limit should not be less than a minimum figure at least equal to the maximum coverage the insurance industry can be expected to provide by full use of international pools and reinsurance. (3) The operator should be required at all times, until the facility is shut down, to provide and maintain financial security, in the form of insurance or bank or state guaranty, equal to the amount to which the aggregate liability is limited. This security should be available only for the compensation of victims, exclusive of costs of investigating claims and defending suits. (4) Absolute liability cannot justifiably be imposed on a supplier, since he will have previously relinquished control over what he furnished the operator. Nor, where a limit on liability has been established, is there any need for the public to sue a supplier if the operator has an absolute liability, to the full amount of the legal limit, for which he must give security. Therefore, in the interest of preventing harassing litigation and a confusing multiplicity of suits, such actions should be barred. If the operator's security is required to cover his suppliers as well, there is also no reason to permit recourse actions against them by the operator or his insurers, except as may otherwise be provided by express contract. (5) Uniform periods of limitation should be provided for the filing of claims. In all cases a claim should be barred after ten years from the date of the event causing injury. A claim should also be barred if not asserted within two years from the time the injury or a subsequent aggravation thereof could have been ascertained by the exercise of ordinary care. (6) Where the financial security provided by the operator is insufficient to satisfy all judgments in full, they should all be reduced ratably. Judgments for personal injury and death should have a prior claim on all or a portion of the fund. Provision should be made for interim partial awards, pending final disposition of the security fund.[165]

The foreign legislation and international conventions dealing with financial protection for nuclear liability incorporate to a lesser or greater degree the above criteria.

The American Price-Anderson Act[166] requires the operator[167] of a nuclear installation to provide financial protection, through insurance, reinsurance or other satisfactory means, for such installa-

---

[165] HARVARD, *op. cit. supra* note 122 at 16, 17.

[166] See *supra* note 166.

[167] "Operator" is taken throughout this paper in the sense of the entity having ownership or legal control over the nuclear installation.

tion up to the amount determined by the Atomic Energy Commission to be reasonably available, and in the case of a reactor of 100,000 electric kilowatts or more, the maximum amount of protection available from private sources ($60,000,000). The operator is indemnified with public funds for any further liability imposed upon it in connection with nuclear incidents in the United States, up to $500,000,000 per incident. The maximum liability that may arise per nuclear incident is fixed at the aggregate sum of the financial protection required of the operator plus the government indemnity. The Act further provides for a procedure in satisfying claims in case the amount of damages exceeds the maximum limit thus established. One other important feature of the American law is the channelling of liability to the installation operator. This is accomplished by the "umbrella-type" of protection: the financial protection coverage includes not only the liability of the operator but extends to any person who may be held liable for a nuclear incident, such as a third-party tortfeasor.

Such system whereby financial security is furnished by the installation operator at certain amounts coupled with the government indemnity and liability is limited to the aggregate amount thus combined, has been adopted in the other atomic energy national statutes and the international conventions. In addition such system is backed up by the following basic features (relevant to the purposes of this paper): (1) the imposition of strict liability for nuclear incidents; (2) exclusiveness of liability of installation operators, with limited rights of recourse against third parties; (3) restrictive grounds for exoneration, e.g., war, insurrection, or grave natural disaster of an exceptional character; and (4) longer period of prescription ranging from ten to thirty years counted from the exposure complained of, and from two or three years after the injury and its cause has been known or should have been known by the plaintiff.

We shall now discuss briefly these features and see how they fit into existing law.

Exclusive liability of operator. —

The question arises as to who should be liable, primarily or exclusively, if the theory of strict liability is adopted. It seems quite universally accepted that liability should primarily be imposed upon the operator of the nuclear installation.[168] Such liability is prac-

[168] See Sec. 9 of U.N. Nuclear Installations (Licensing and Insurance) Act of 1959, *supra* note 156; secs. 1 & 4 of U.K. Nuclear Installations (Amendment) Act of 1965, *supra* note 156; see secs. 170 & 11 (r) of the Price-Anderson Act, *supra* note 166; see Sec. 9 of law of Sweden, *supra* note 157; see Art. of Swiss law, *supra* note 158; see secs. 13 & 25 of Western German law, *supra* note 159; see Arts. 3 & 4 of the law of Japan, *supra* note 161.

tically exclusive except that a very limited right of recourse may be available to the operator against third parties, such as manufacturers or suppliers. Channelling of liability may be effected either by the legal method whereby the law attaches liability to no other person except the operator only, or by the so-called economic method under which civil law actions would still lie against other persons who caused the accident but the operator is required to maintain insurance or other means of financial indemnification with the protection thereunder extending to such other persons liable. The rule of exclusivity is justified by the economic needs of the new technology which require the avoidance of the "pyramiding" of insurance which would, considering the possibility however remote of a nuclear incident causing widespread damage, make it impossible to secure insurance in view of the very limited insurance market.

For moral reasons, the notion of holding the installation operator exclusively liable regardless of whether other persons may have caused the accident, may be unacceptable in some jurisdictions, particularly in those where responsibility to compensate is identified with culpability, fault or negligence. Such objection, however, may be met by the use of the economic method of channelling. It is also to satisfy the community's sense of moral wrong that recourse action is preserved against the *individual* intentionally causing damage. [169]

Should liability be imposed upon the operator even if he were not the proprietor of the installation? It is possible of course that an owner would entrust the operation of his facility to a management corporation experienced in the handling of highly specialized nuclear equipment. Normally, where there is such an arrangement it may be reasonably expected that an agreement would be entered into between the owner and the managing entity as regards ultimate assumption of responsibility for nuclear risks. Should the state be governed by such agreement? Suppose there were no such agreement?

Under Philippine law proprietors are liable for damages caused by dangerous instruments or noxious substances,[170] as well as for damages caused by the collapse of a building or structure if such collapse should be due to the lack of necessary repairs.[171] If the damage is due to fortuitous events or if there is no fault or negligence, the proprietor is not liable. The person claiming the damage

---

[169] See Art. X (b), *Vienna Convention on Civil Liability for Nuclear Damage, supra* note 1963; *Report of the Philippine Delegation to the International Conference on Civil Liability for Nuclear Damage* 77 (1964).

[170] Arts. 2191, 2184, Civil Code.

[171] *Id.* Art. 2190.

has the burden of proving that collapse was due to lack of necessary repairs. On the other hand, the burden of proving that the collapse was due to fortuitous events rests upon the proprietor.[172]

Of significance in this connection is the decision holding a person having legal possession or control of premises liable for damages although the event producing the damage was caused by somebody else.[173] This rule may perhaps be applied by analogy to the company managing the nuclear installation.

Where the damage has been caused by an agent or employee of an operator the theory of the latter's liability varies greatly under the different legal systems. In Anglo-American law, the theory of *respondant superior* makes the employer liable for torts committed by his employees acting within the scope of their employment.[174] In some civil law countries inspired by the Roman law, the principle of *respondeat superior* in tort is also recognized.[175] In the Philippines, owners and managers of an establishment or enterprise are likewise "responsible for damages caused by their employees in the service of the branches in which the latter are employed or on occasion of their functions, "but they are exonerated if they can prove that they observed" all the diligence of a good father of a family to prevent damage,"[176] or, in other words, that they have exercised reasonable care in selecting and supervising such employees.[177] The same rule obtains in Germany[178] and Switzerland.[179] The difficulty with these rules, however, is that it is not clear whether a managing company would be considered an "employee" or an independent contractor. Again, assuming it were deemed an independent contractor what would be the effect of any control exercised by the owner? In a nuclear installation, it is likely that the owner would retain some degree of control over any operating firm he may have hired to operate his installation.

In any case, the ambiguity of liability as between the non-operator and the non-proprietor operator may be removed by imposing liability and the obligation to secure financial protection upon the person licensed by the state to operate the installation, regardless of whether that person is the proprietor or the operator. This

---

[172] MANRESA, COMMENTARIOS EN EL CODIGO CIVIL 673-679.

[172] 12 MANRESA, COMMENTARIOS EN EL CODIGO CIVIL 673-679 (1912).

[173] See Dingcong v. Kanaan, 72 Phil. 14 (1941).

[174] PROSSER at 350-351.

[175] E.g. Italy (Sec. 2049, *Civil Code*); France (Art. 1384, *Civil Code*).

[176] Art. 2180, Civil Code; Bahia v. Litonjua, 30 Phil. 624 (1915), Walter Smith v. Cadwallader, 55 Phil. 517 (1930); Ong v. Metropolitan (Water) District, G.R. No. 7664, Aug. 29, 1958.

[177] Arambulo v. Manila Electric Co., 55 Phil. 75 (1930); Yumul v. Juliano and Pampanga Bus Co., G.R. No. 47690, April 28, 1941, 40 O.G. 3119 (Oct., 1941).

[178] *Burger liches Gesetzbud*, Sec. 831.

[179] *Code des Obligations*, Art. 55.

is the solution adopted in the various legal instruments considered above.

Another important aspect of the question of who shall be liable for risks connected with a nuclear installation is the problem of the liability of manufacturers and suppliers. In the United States, the liability of manufacturers and suppliers is generally dependent upon proof of negligence, although there seems to be some movement towards the imposition of strict liability upon them,[180] and the development of case law applying the doctrine of *res ipsa loquitur* by relaxing the requirement of exclusive "control."[181] It has been contended that, in view of the decisions on products liability, it will be difficult to avoid application of *res ipsa loquitur* in cases involving atomic energy suppliers.[182] There is, however, opinion to the contrary.[183]

The Philippines does not have a developed doctrine corresponding to the law of product liability as it has evolved in the United States. Article 2187 of the Civil Code which imposes strict liability[184] is clearly restricted to manufacturers of foodstuff, drinks, toilet articles and *similar* goods. The collapse of a building or structure, if due to defects in the construction, makes the engineer, architect or contractor responsible for the defective construction.[185] Moreover, the engineer or architect who drew up the plans and specifications for a building is liable for damages if within fifteen years from the completion of the structure, the same should collapse by reason of a defect in those plans and specifications, or due to defects in the ground.[186] The contractor is likewise responsible for damages if the edifice falls, within the same period, on account of defects in the construction or the use of materials of inferior quality furnished by him, or due to any violation of the terms of the contract. Acceptance of the building, after completion, does not imply waiver of any of the foregoing causes of action by reason of defect.[187]

For liability to arise against the engineer, architect or contractor under the foregoing provisions, all that the plaintiff need prove are the existence of the defects mentioned, without necessarily showing

---

180 See James, *General Products—Should Manufacturers Be Liable Without Negligence*, 24 TENN. L. REV. 823-827 (1957).

181 See Gordon v. Aztec Brewing Co., 33 Cal. 2d 514, 203 Pac. 2d 522 (1949); Escola v. Coca Cola Bottling Co., 24 Cal. 2d 453, 150 Pac. 2d 436 (1944); Nichols v. Nold, 174 Kan. 613, 258 Pac. 2d 317 (1953); Ryan v. Zweck-Wollenberg Company, 266 Wis. 630, 64 N. W. 2d 226 (1954).

182 STASON ESTEP & PIERCE at 761.

183 See Cavers, *op. cit. supra* note 102 at 655.

184 See discussion in pp. 589-590, *supra*.

185 Art. 2192, Civil Code.

186 *Id.* Art. 1723.

187 *Ibid.*

negligence on the part of the defendant. This would seem to be an approach close to strict liability. Unless the case, however, falls under these provisions, the manufacturer and suppliers of reactors and reactor components will clearly be liable only for fault or negligence under Article 2176.[188]

Exonerations and defenses. —

Assuming the adoption of the doctrine of strict liability, the question remains upon what grounds the operator liable shall be exonerated and what defenses, if any, he may set up against liability. As a general rule no claim for compensation for damages will arise if the accident was attributable to circumstances wholly beyond the defendant's power to control or foresee. In this category are fortuitous events or *force majeure* or acts of God, such as floods or earthquakes. This is the rule in the Philippines, which is applicable to torts.[189] In the language of the Civil Code, "no person shall be responsible for those events which could not be foreseen, or which, though foreseen, were inevitable."[190] Exceptions to this rule of non-liability are the cases when the law expressly provides otherwise, when there is a stipulation to the contrary, or when the nature of the obligation requires the assumption of risk.[191] On the other hand, noteworthy is the fact that in two cases in which the Civil Code imposes strict liability, the defendant is exempt in the case of force majeure.[192]

Under the Vienna Convention there is complete exoneration of an operator for nuclear damage caused by a nuclear incident directly due to an act of armed conflict, hostilities, civil war or insurrections. The Convention also provides for exemption from liability of the operator for nuclear damage caused by a nuclear incident directly due to a grave natural disaster of an exceptional character.[193]

Fundamentally, the question involved here is one of deciding on whom the burden of loss caused by fortuitous circumstances should fall. One may well argue against the exoneration of the operator for the above-mentioned causes. If the philosophy behind strict liability is that the exigencies of social justice require that in a case where there is blame on neither side, the loss should be shifted to the party that can best bear the loss, then the operator should remain liable, *force majeure* notwithstanding. Such exoneration would especially have no justification where the liability of

---

188 See *supra* note 32
189 Art. 2178, Civil Code.
190 *Id.* Art. 1174.
191 *Ibid.*
192 See *supra*, notes 138, 140
193 Art. IV (3), *supra* note 159.

the operator is covered by insurance or other financial security as part of the plan of financial protection.

As to the defense of contributory negligence, the law of the Philippines bars recovery by the plaintiff where his own negligence is the "immediate and proximate" cause of his injury. But if his negligence was only contributory, the immediate and proximate cause of the injury being the defendant's lack of due care, the plaintiff may recover reduced damages.[194] This conforms to the rule in other civil law systems where contributory negligence is a defense only to the extent and in the proportion that it has contributed to the injury. Some states in the United States have also adopted this principle by statute, although in common law the rule is that contributory negligence defeats all recovery.[195] Under the Vienna Convenion, the "gross negligence" of the injured party or the act or omission of such person done with intent to cause damage, shall relieve the operator wholly or partly from his obligation to pay compensation to such person, if the law of the "competent court" so provides.[196]

Period of prescription. —

One marked peculiarity of radiation personal injury is its latency. Depending upon the degree of exposure, some radiation injuries will be detectable immediately or within a few months after exposure to injurious radiation; others may remain latent for a considerable period of time. These delayed or latent injuries (e.g. certain forms of cancer and genetic damage) require a restudy of the period of prescription. Establishing an adequate period of time within which claims for nuclear injuries are to be filed is to strike a balance between the assurance of sufficient safeguards for the interests of the public and protecting the nuclear industry, as well as the latter's insurers, against exposure to a host of belated claims for all the ailments for which radiation is only one among a number of possible causes.

Existing Philippine law,[197] which provides for a prescriptive period of four years for tort actions, is woefully short when applied to nuclear injuries. Specific legislation on atomic energy in foreign states have established a much longer prescriptive period. The German statute, for instance, provides that the claim for compensation must be brought within two years from the date when the claimant became aware of the damage and of the identity of the

---

[194] Art. 2179, Civil Code; Rakes v. Atlantic Gulf & Pacific Co., 7 Phil. 359 (1907).

[195] PROSSER at 283-284.

[196] Art. IV (2), *supra* note 159.

[197] Art. 1146, Civil Code.

person liable, but in any event within thirty years from the date of the incident which caused the damage.[198]

The Vienna Convention establishes a period of prescription of ten years from the date of the nuclear incident, with an option to the "law of the competent court" to establish an additional period of prescription of not less than three years from the date on which the person suffering nuclear damage had knowledge or should have had knowledge of the damage and the operator liable for the damage, provided that the ten year period is not exceeded.[199]

In any Philippine law to be drafted, the absolute period of prescription may well be fixed between ten and thirty years. Furthermore, where damage is caused by continuous operation of a nuclear installation, it would be best to compute the period of limitation from the last day of such operation, in accordance with modern legal trends.[200]

III. CONCLUSION

There is almost a universally felt need for an apposite and responsive legal system in the nuclear field; one which would clearly define the jural responsibilities of operators of nuclear installations, of suppliers of nuclear equipment, as well as the Government, in the event of nuclear incidents, and which would provide for adequate compensation to victims of such accidents. The success of the Price-Anderson Act in apportioning the financial burden of atomic hazards between industry and government has removed a substantial impediment in the United States to the manufacture of atomic facilities and the utilization of nuclear power. Failure to solve this problem might very well have meant that the development of atomic power facilities, techniques and know-how in that country would have been seriously hindered.

Similar considerations affect the Philippines with the prospective utilization of atomic power. The existing laws of the Philippines are patently inadequate to cope with the legal problems of this new technology. The problems are complex but, fortunately, in seeking solutions to them, guiding criteria are no longer wanting. Special rules on tort liability for nuclear damage derive from the same social necessity as conventional tort law. The right of the individual to be protected from the hazards of atomic energy must be weighed not only against the freedom to engage in lawful enterprise but also

---

[198] Sec. 32 (1), *supra* note 159.

[199] Art. VI (1) and (3), *supra* note 159.

[200] See Chicago v. Washingtonian Home of Chicago, 289 Ill. 206, 124 N. E. 416 (1919); Hotelling v. Walther, 169 Ore. 559, 130 P. 2d 944 (1942).

the avowed national policy of availing of the beneficial uses of the atom to meet partly the rising expectations of the people. Indeed, the Government has adopted a positive program to encourage the development and use of atomic energy and is, in fact, itself directly engaged in the development of such use. Such a policy would evidently be self-defeating if the Government failed to provide for the legal framework which the economic use of atomic power demands.