On 21 September 1988, delegates from 51 countries meeting at the IAEA in Vienna adopted a Joint Protocol that establishes a link between two international conventions in the field of nuclear liability. (Credit: Katholitzsky for IAEA)

Nuclear Liability: Status and prospects

Governments adopt a Joint Protocol to improve the international compensation system for nuclear damage

by V. Boulanenkov and B. Brands

Where accident prevention and mitigation have not succeeded in avoiding damage from nuclear installations, a comprehensive liability regime and an obligation to pay compensation for all nuclear damages must exist as an important component of what is referred to as nuclear energy order. In the field of civil liability, the 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy and the 1963 Vienna Convention on Civil Liability for Nuclear Damage have long operated in isolation from each other. A Joint Protocol that establishes a link between the two Conventions was adopted by consensus at a one-day Diplomatic Conference, jointly convened by the IAEA and the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (NEA/OECD) in Vienna on 21 September 1988. The Joint Protocol was signed by 19 States on that day.

The Joint Protocol extends to the States adhering to it the coverage of the two Conventions. It also resolves potential conflicts of law which could result from the simultaneous application of the two Conventions to the same nuclear accident, notably in the case of international transport.

The conclusion of the Joint Protocol is a landmark in the efforts towards the establishment of a comprehensive liability regime. The work, however, is not yet complete.

In 1986, the Agency began consideration of the question of State liability for nuclear damage in an effort to develop a comprehensive liability regime that would provide better protection to potential victims of a nuclear accident. The Board of Governors dealt with this question at its subsequent five meetings, the last time in June 1988. At its request, the Secretariat has prepared several papers on the matter, including a special study setting out basic approaches to the question of State liability, as well as a compilation of comments transmitted by Member States with respect to issues raised in that study.* Notwithstanding a broad spectrum of opinion expressed in the comments and during discussions in the Board of Governors meetings, wide support for the examination by the Agency of the question of State liability for damage arising from a nuclear accident was evidenced. Most recently, the 32nd regular Session of the IAEA General Conference adopted a resolution concerning liability for nuclear damage which opens up favourable prospects for the consideration of this matter in the Agency.

This article will provide an overview of the existing civil liability regime, and of the Agency's work in the field of State liability, and will discuss the prospects for future work in light of the resolution adopted by the IAEA General Conference.

Civil liability

From the beginning of the development of the peaceful utilization of nuclear energy, it was realized that atomic energy would involve hazards which, because of their potential magnitude and their peculiar characteristics, would not be comparable with conventional risks. The first risk assessment of civilian nuclear power, commonly called the Brookhaven Report, was made in 1957. For the worst case of a nuclear accident in a power plant, it predicted lethal exposures from none to a calculated maximum of 3400, non-lethal injuries from none to a maximum of 43 000 and an estimated property damage from US $500 000 to US $7 billion.

It was not surprising that with this knowledge, and the experience of two nuclear-bomb explosions in the Second World War, it was considered desirable that special legislation be devised to provide rules and procedures to ensure maximum possible financial protection for the public. However, it was also realized that the young nuclear industries (operating, manufacturing, and transportation) should not be exposed to an unreasonable or indefinite burden of liability and to the risk of harassing litigation.

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* See documents GOV/INF/508, GOV/INF/509, GOV/2306, GOV/INF/537, GOV/INF/550, and GOV/INF/550 Add.1.

Special legislation was first enacted in the USA under the Price-Anderson Act. Following this Act, which paved the way in this area, a first regional Convention, laying down the principles for third party liability and insurance for the operators of nuclear installations in Western Europe, was signed in 1960 by almost all members of the Organisation for European Economic Co-operation (the current OECD). The Convention, the Paris Convention, revised by an Additional Protocol in 1964, entered into force in 1968. It today has 14 Contracting Parties: Belgium, Denmark, Federal Republic of Germany, Finland, France, Great Britain, Greece, Italy, Netherlands, Norway, Portugal, Spain, Sweden, and Turkey.*

Since, however, a radioactive fallout will not respect national frontiers (and, therefore, national or regional solutions could not be sufficient to cope with all aspects of nuclear hazards) a worldwide Convention on Civil Liability for Nuclear Damage (Vienna Convention) was adopted in 1963, under the auspices of the IAEA. It entered into force on 12 November 1977 and has 10 Contracting Parties: Argentina, Bolivia, Cameroon, Cuba, Egypt, Niger, Peru, Philippines, Trinidad and Tobago, and Yugoslavia.

The goals of the regimes established under the two Conventions are similar: to provide victims of a nuclear accident the guarantee of rapid, efficient, and equitable compensation and to protect the emerging nuclear industry against the uncertainties of liability under common law.

The basic features of the two regimes are also identical. They can be summarized as follows:

● ***Strict (objective, absolute, no-fault) liability of the operator.*** To facilitate for victims the filing and litigation of claims, and also for the persons liable the purchase of financial coverage for their liability, both Conventions channel liability for nuclear damage to one person with respect to each incident. This person is the operator of the nuclear installation concerned and shall always be exclusively liable for incidents occurring in that installation. Suppliers do not bear any liability even if they alone caused the damage. The victim making a claim for compensation only has to prove the causal link between the accident and his damage. There is no need for proving fault or negligence.

● ***Limitation of liability.*** A first limitation concerns the amount of the nuclear operator's liability. Pursuant to the Paris Convention, maximum liability may not be greater than 15 million SDRs and not less than 5 million SDRs.* Under national legislation, however, an amount of more than 15 million SDRs may be fixed, subject to financial cover being available. The Vienna Convention does not fix an upper ceiling for the amount of liability. In accordance with the text of that Convention, the liability of the operator may be limited by the installation State to not less than US $5 million for any one nuclear incident. In addition, both Conventions limit the operator's liability in time. Compensation rights shall be extinguished if an action is not brought within 10 years from the date of the nuclear incident. Longer periods than 10 years are, however, permissible under the terms of national law.

● ***Compulsory financial security.*** It is clear that the value of liability provisions strongly depends on the availability of assets to cover such liability. Under both Conventions, therefore, the operator must take out insurance or provide other financial security approved by the state for an amount corresponding to his liability.

● ***Unity of jurisdiction and enforcement of judgments.*** Under both Conventions, jurisdiction over actions under the Conventions lies exclusively with a court of the Contracting Party in whose territory the nuclear incident causing damage occurred. Judgments made by this competent court under the Convention shall be enforceable in the territory of any of the Contracting Parties to the applied Convention. In this way, it is ensured that the liability limitation is complied with and that compensation will be equally distributed.

● ***Non-discrimination.*** Both Conventions expressly state that they shall be applied without any discrimination based upon nationality, domicile, or residence. The same principle must also be reflected in the relevant implementing and complementing national laws. In this way, both Conventions underline that one of the pillars of this civil liability system is the equal treatment of all persons concerned.

Joint Protocol

Despite their common basic principles, there existed no relationship between the Paris and the Vienna Conventions. Some original ideas that Parties to the Paris Convention would adhere to the Vienna Convention

* In 1963, the Paris Convention was supplemented by the Brussels Convention, which entered into force in 1974. Of the 14 Parties to the Paris Convention, only Greece, Portugal, and Turkey did not adhere to it. This supplementary Convention provides for a system of State compensation for the case in which the damage resulting from a nuclear accident would exceed the maximum amount of the operator's liability according to the Paris Convention. It establishes a compensation system which is divided into three stages. The first tier compensation is provided by the operator's insurance or other financial security under the Paris Convention. The ceiling for this tier lies in general between 5 and 15 million Special Drawing Rights (SDRs) of the International Monetary Fund, depending on the national legislation concerned. The second tier, from the amount of the operator's liability up to 70 million SDRs, is met by the Government of the country in which the nuclear installation of the operator liable is situated. The third tier, covering damage between 70 and 120 million SDRs, is met jointly by the countries Party to the Brussels Supplementary Convention according to a distribution formula based on GNP and the thermal reactor power in the territory of each Contracting Party. The amounts of the second and third tier will increase up to 175 million SDRs and 300 million SDRs when the Protocol thereto, adopted in 1982, enters into force.

* Special drawing rights of the International Monetary Fund.

never materialized. This situation, in which both Conventions were operating in isolation from each other, had the following consequences:

- Neither Convention applied to nuclear damage suffered in the territory of a Contracting Party to the other Convention; this is of particular relevance in cases where the damage originated in land-based installations.
- Conflicts of law could arise since both Conventions would apply to nuclear incidents occurring in the territory of a Contracting Party to the other Convention; which is especially relevant in transport cases.

The IAEA and NEA therefore have endeavoured since the 1970s to elaborate a solution which would establish a relationship between the Vienna and Paris Conventions and have the dual purpose of:

- extending mutually the civil liability regime established under each Convention for the wider protection of victims of a nuclear accident; and
- eliminating conflicts of law, which might arise from simultaneous application of the two Conventions in the event of a nuclear accident involving Parties to both Conventions.

The governing bodies of both organizations agreed in 1987 that the simplest and most practical solution to achieve these purposes would be to formalize the relationship between the two Conventions by means of a Joint Protocol. It was also felt that such harmonization might provide an incentive for broader adherence to the Vienna Convention. On 30 October 1987, the text for the Joint Protocol was adopted by consensus in a meeting of the Joint IAEA/NEA Working Group of Governmental Experts, and on 21 September 1988 the Joint Protocol was formally adopted and opened for signature in the Conference on the Relationship between the Paris and the Vienna Conventions. On the day of its adoption, the Joint Protocol was signed by 19 States: Argentina, Belgium, Chile, Denmark, Egypt, Federal Republic of Germany, Finland, Greece, Italy, Morocco, Netherlands, Norway, Philippines, Portugal, Spain, Sweden, Switzerland, Turkey, and the United Kingdom of Great Britain and Northern Ireland.

The first principle underlying the Joint Protocol is to create a link or "bridge" between the two Conventions by abolishing the distinction between Contracting Parties and non-Contracting States as regards the operative provisions of either Convention. The second principle consists in making either the Vienna Convention or the Paris Convention exclusively applicable to a nuclear incident by means of an appropriate choice of law rule. These principles are reflected in the main articles of the Joint Protocol.

In Article I of the Joint Protocol, the two Conventions are defined. The definitions include any amendment to the relevant Convention which is in force for a Contracting Party to this Protocol. This language is intended to make it clear that each Contracting Party to both the Protocol and the Vienna Convention or the Paris Convention is bound, with respect to the other Parties to the Protocol, to apply either Convention in the same form as it does in relation to the other Parties to its own Convention.

Article II extends the respective operators' liability to nuclear damage suffered in territories of the Parties to the other Convention. Thus, if a nuclear incident occurs in a nuclear installation situated in the territory of a Party to the Paris Convention (Vienna Convention) and causes damage to persons or property in the territory of a Party to the Vienna Convention (Paris Convention), the operator of that installation is liable for such damage. His liability is determined "in accordance with that Convention", i.e. he is always liable under the Convention to which the State in which his installation is situated is a Party and the amount of liability is determined by the legislation of that State pursuant to the applicable Convention.

Article III determines the applicable Convention. As both Conventions apply not only to nuclear incidents occurring in nuclear installations, but also to nuclear incidents occurring during carriage of nuclear materials, choice of law rules are included to cover both situations.

Article IV is complementary to Articles II and III and specifies that all the operative Articles of either Convention are applied in the case of a nuclear incident, e.g. those dealing with liability amounts, financial cover, recourse and subrogation, jurisdiction and enforcement of judgments, as well as compensation and its equitable distribution. On the other hand, it excludes the "procedural" Articles of both Conventions (e.g. those dealing with signatures, ratifications, accessions, amendments), as the Joint Protocol does not afford the full status of a Party to the other Convention.

The remaining Articles of the Joint Protocol, namely V to XI, contain the final clauses. They follow the usual practice and do not need any clarification.

Areas for future work

Although the Joint Protocol has been an important first step in the process of harmonization and improvement of the civil liability regime, there are some serious deficiencies which need to be addressed in the future. Mention can be made in this context of:

- ***Limited territorial scope of application.*** Since only 24 States are Party to both the Vienna and Paris Conventions, the scope of their application remains limited. Many States with significant nuclear activities have not adhered to either of the two Conventions. Examples are Canada, India, Japan, the Soviet Union, the USA, and the other socialist States of Eastern Europe. Out of approximately 417 nuclear power plants worldwide, less than 5 are covered by the Vienna Convention and about 125 are covered by the Paris Convention. It is to be hoped that the Joint Protocol may prove attractive to the States who have not so far joined either of the two Conventions to become Party to one of them and enjoy the coverage of the new extended civil liability regime; thus, in turn, widening the scope of their application.

● ***Limited liability.*** As mentioned before, both Conventions provide for limited liability of the operator. The question, however, is whether such limitations are still adequate. Although it is often argued that the limitation is a necessary counterbalance to objective liability, there are also States with unlimited nuclear liability (Bulgaria, Federal Republic of Germany, German Democratic Republic, Hungary, Poland, and Switzerland). The accident at Chernobyl is evidence that the potential extent of damage caused by a nuclear incident would be quite large and that the liability ceilings fixed in the Paris or Vienna Convention might not be adequate. It is also argued that the limitation in time established by both Conventions (10 years) might not be adequate in all cases, because of the pecularities of radiation effects.

● ***Lack of definition of nuclear damage.*** In both Conventions the concept of "nuclear damage" is not defined. That means it is left to the national legislator of the Contracting States or to the Courts to decide on their scope. This might lead to differences of definition and to uncertainty as to the extent of compensation to be paid. For example, should compensation claims for preventive measures made by States for the protection of the public be covered or not? The problem is, however, that these claims do not concern nuclear damage as such, but the compensation for the financial cost of such measures of the public authorities, by which the direct causal link between the accident and the damage is broken. This immediately raises the question of the reasonableness of such measures. It is therefore of great importance that the concept of nuclear damage be defined.

International (State) liability

A better perception of possible international sociopolitical implications in the event of transboundary nuclear damage, which evolved following the accident at the Chernobyl nuclear power plant, has focused public attention on the inadequacy of available international legal norms in the field of nuclear liability. It has become evident that the existing agreements based on the private law concept, namely the Paris Convention and the Vienna Convention, are not comprehensive enough to cope with varied situations that might arise. The adoption of the Joint Protocol establishing a formal link between the two Conventions, though a welcome improvement, in fact has not brought about a radical change.

In addition to the limitations discussed above, it should be added that the very civil law character of the Paris and Vienna Conventions imposes certain limitations upon their scope and mechanisms for settlement of potential claims that can be resorted to under these instruments. Thus, they do not address issues relating to inter-State settlement of claims, liability for harmful consequences causing deterioration of the general environment, *res communis* — air, water, soil, flora, fauna; or for genetic damage to population; or State responsibility for international political and moral damage resulting from unwarranted actions taken by a State in connection with a nuclear accident. Both Conventions provide for private legal actions in competent courts as the procedure for settling claims relating to nuclear damage, leaving out a possibility of presenting claims between States on their own behalf or on behalf of their citizens who have sustained transboundary loss or injury. However, a non-judicial machinery may be better suited to the situations discussed above, as well as in cases involving claims between States Parties and non-Parties to the existing liability conventions, and between the latter. Besides, civil law procedure may prove ineffective in cases where harm is inflicted on large numbers of individuals.

Further, as noted earlier, limited acceptance has been for years a weak point of the two instruments. The Paris Convention is in fact a regional agreement; the Vienna Convention, though of universal nature, has at the moment only 10 parties. For various reasons, the two Conventions have not attracted adherance of many countries which are active in the nuclear field. Consequently, only about one third of the total number of nuclear reactors throughout the world are covered by these Conventions.

A new approach discussed

Given the gaps and limitations of the Vienna and Paris Conventions, it has become obvious that if the goal of establishing a comprehensive nuclear liability regime is to be achieved, the tendency to consider the problem of liability for damage arising from nuclear accidents only in terms of private law should be overcome. A new approach has been first spelled out by the Soviet Union in 1986, which suggested that a new international legal order should be set up in this field covering both material as well as moral and psychological damage. The idea has since taken the more specific shape of a proposal to develop a new international legal instrument based on the concept of State liability which was put forward as a part of the Programme for Establishing an International Regime for Safe Development of Nuclear Energy.* This initiative has enjoyed wide support in the IAEA and, consequently, has been included on the agenda of the Board of Governors.

The exchange of views that ensued has helped to identify, in general terms, a basic approach and main issues of substance that will have to be dealt with in the consideration of the matter. At the request of the Board of Governors, the IAEA Secretariat prepared a special study on the conceptual framework of State liability in the nuclear field which reflected views expressed in the course of the Board's deliberations.** It has pointed out the usefulness of a new international instrument on State liability which could fill the legal gaps not covered by the Paris and Vienna Conventions and provide a framework for combining the existing Conventions together

* See documents INFCIRC/334 and GC(SPL.1)/8.

** See document GOV/2306.

with a new instrument into a comprehensive nuclear liability regime. Also, it contained a suggestion that an open-ended working group of governmental experts be convened to carry out the further examination of the relevant substantive issues. The written comments made by governments on the ideas set forth in the above-mentioned study have been compiled in a separate document.* They provide a deep insight into the matter and will be very helpful in future work.

Despite wide interest shown in the proposed new instrument, the consideration of the matter in the IAEA has not gone far beyond general discussions as to whether and through what procedural mechanism it can be tackled. In fact, the substantive issues relevant to the preparation of a new instrument have not been specifically dealt with yet.

This is because of the lack of unanimity among Member States concerning the approach to be adopted by the Agency. There has been some sentiment against any involvement of the Agency at all in the problem of State liability for nuclear damage until the International Law Commission (ILC) develops basic principles and rules to govern more general areas of international law relating to State responsibility and international liability for injurious consequences arising out of acts not prohibited by international law, which are currently under consideration by the ILC.

It appears, however, that this issue is no longer an obstacle as a number of convincing arguments have been expounded to show that the Agency, as a major international organization in the nuclear field, is well placed to take the lead in a specific area where it possesses the necessary experience. The work of the IAEA would be oriented toward formulating special norms to regulate a specific area of State liability for nuclear damage and, thus, it would not duplicate the efforts of the ILC aimed at developing rules applicable to a multitude of diverse activities. Both studies could be carried out in harmony to avoid divergence of purpose. It can also be noted that the general framework being developed by the ILC is, in fact, intended to encourage States to enter into special agreements to regulate particular activities.

Reservations also have been reiterated on the grounds that the existing private law mechanisms are better fit to govern liability for nuclear damage. It has been argued that the Paris and Vienna Conventions could be amended to fill any existing gaps, and that a joint protocol harmonizing their application should be adopted as a first step in that direction.

* See documents GOV/INF/550 and GOV/INF/550 Add.1.

As a result, the work on the Joint Protocol enjoyed priority, while the question of State liability has been approached with caution. Since divergence of views persisted at the meetings of the Board of Governors held last June, it was considered that the time was not yet ripe for setting up a working group to deal with the question of State liability.

Prospects for future work

On 23 September 1988, the IAEA General Conference at its 32nd regular session adopted by consensus a separate resolution concerning liability for nuclear damage. It urges the continuation, as a matter of priority, of the consideration of the question of damage arising from a nuclear accident, taking into account the discussions and views and documents prepared by the Secretariat concerning the question of international (State) liability; further, it requests the Board of Governors to convene in 1989 an open-ended working group to examine all aspects of liability for nuclear damage. The Board is also requested to report to the 33rd regular session of the General Conference on the progress made.

Considering the specific request to study "all aspects" of nuclear liability, it may be expected that a new impetus will be given to the examination of State liability. Indeed, now that the work on the Joint Protocol linking the Paris and Vienna Conventions has been completed, it would be reasonable for the proposed working group to focus on consideration of substantive issues relevant to State liability for nuclear damage. This by no means implies that in so doing the civil liability conventions will lose significance, or the efforts to expand and strengthen the civil liability regime will cease.

The General Conference Resolution is broad enough to ensure that the agenda of the working group could be arranged in such a way that both questions would be adequately covered. But to set the question in the right perspective, it would be unrealistic to expect that legal issues relating to the establishment of a comprehensive nuclear liability regime can be solved merely by continuously mending the existing civil liability system. Obviously, due to limitations of its legal framework, this system alone cannot provide sufficient foundation upon which to build a comprehensive nuclear liability regime.

The alternative option, which would open the way to accomplishing this task, is to channel main attention toward substantive examination of the issues relating to the preparation of an instrument on State liability for nuclear damage.