

INTERNATIONAL CO-OPERATION IN RADIOACTIVE WASTE MANAGEMENT: ISSUES ARISING IN NUCLEAR LIABILITY

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Abstract

International cooperation on the back end of the fuel cycle has potential to mobilize more resources and reduce the time and costs involved in developing fuel cycle infrastructure. Also, in a broad multilateral approach, newcomer countries could receive necessary assistance including information, knowledge, financing, human resource development, nuclear infrastructure development, and a feasible technical solution for managing and disposing of spent fuel and high level waste. This contribution aims to discuss applicability of the existing nuclear liability conventions to relations arising in the framework of this cooperation and to identify obstacles for further development of international cooperation in this area.

Introduction

International conventions covering the field of nuclear liability (i.e. the Convention on Third Party Liability in the Field of Nuclear Energy, thereafter “the Paris Convention” and the Vienna Convention on Civil Liability for Nuclear Damages, thereafter “the Vienna Convention”) contain some basic liability principles that differ considerably from the principles of ordinary tort law:

1. The application of the liability regime will trigger if a nuclear installation causes a nuclear incident. Consequently, both the Paris and the Vienna Convention do provide for (to great extent) similar definition of what is to be understood as a “nuclear installation” (1) and “nuclear incident” (2). Under the Paris Convention, the Steering Committee of the OECD/Nuclear Energy Agency (thereinafter “the Steering Committee”) has competence both to enlarge the applicability of the liability regime to other installations “in which there are nuclear fuel or radioactive products or waste” (3) and to exclude some installations from the application of the Convention, “if in its view the small extent of the risks involved so warrants” (4).

2. Each nuclear installation must have a person in charge: the *operator*, who is exclusively liable for nuclear damage (5). No other person may be held liable, and the operator cannot be held liable under other legal provisions. The nature of his liability is absolute. The operator will be *exonerated* from liability only if he proves that the nuclear incident was directly due to armed conflict, hostilities, civil war, insurrection, a grave natural disaster of exceptional character (6). As a *quid pro quo* for these very strict conditions of the operator's liability, the Contracting Party may limit the operator's liability by national legislation. However, the conventions provide for liability limits, which may be implemented by national legislation (7).

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3. Further, the conventions require the operator to maintain mandatory insurance or to provide other financial securities covering its liability for nuclear damage in such amounts, of such types and in such terms as the Contracting Party specifies.

4. Also, operators' liability is also limited in time (8). Here, the conventions provide for a objective period, starting from the date of the nuclear incident. Also, a subjective period may be established by the national legislation.

5. At the same time, the conventions provide that courts of the Contracting Party where the nuclear incident occurred will have exclusive jurisdiction over all actions brought for damages caused by a nuclear incident occurring in their territory (9).

This international congress is devoted to the topic "International Co-operation in Nuclear". Therefore, this contribution aims to discuss applicability of the liability regime, as established by the Paris and Vienna Conventions, on international co-operation in the area of radioactive waste management.

I.

Both the Paris and Vienna Convention do provide for certain rules on the transfer of liability from one operator to another. In principle, the operator of a nuclear installation shall be liable for nuclear damage caused by a nuclear incident involving radioactive products and waste coming from or originating in his nuclear installation (10):

a) before liability with regard to nuclear incidents involving the radioactive products and waste has been assumed, pursuant to the express terms of a contract in writing, by the operator of another nuclear installation (11),

b) in the absence of such express terms, before the operator of another nuclear installation has taken charge of the radioactive products and waste (12),

c) where the radioactive products and waste have been sent to a person within the territory of a non-Contracting State, before they have been unloaded from the means of transport by which they have arrived in the territory of that non-Contracting State (13).

Consequently, the existing international instruments reflect risks arising from the radioactive waste for both human health and property and link specific liability regime to potential damages arising from them.

The applicability of this liability regime will not cause specific problems in case of international co-operation in re-processing of spent nuclear fuel. Both the Paris and Vienna Convention did included "factories for the re-processing of irradiated nuclear fuel" (14) under the installations covered by the liability regime. Consequently, the operator of a re-processing facility is exclusively liable for damages occurring by a nuclear incident in this installation. In the liability regime, established by both Conventions, the operator will be liable after liability with regard to nuclear incidents involving the spent fuel has been assumed by him, pursuant to the express terms of a contract in writing, from the operator of another nuclear installation (15). A vice versa, the express terms of a contract in writing (factual disposition respectively) will decide the transfer of liability from the operator of the reprocessing facility, after the products of the reprocessing (uranium, plutonium, and waste) will be handed over (16).

II.

The issue is more complicated, when analysing potential future co-operation in operating of shared (international) repositories of spent nuclear fuel and radioactive waste. Both the Paris and the Vienna Convention include “facilities for storage” among the nuclear installations, provided the storage is not incidental (17). Any explicit reference to the repositories for the final disposal of spent fuel and other radioactive waste is missing in these conventions. However, inapplicability of the liability regime as established by the international convention on repositories will have following impacts: all operators in whose installations the waste was last time before disposal into a repository, would remain liable *forever* with respect to a nuclear incident caused by radioactive waste in a repository and would have an obligation to maintain corresponding insurance.

Therefore, in the liability regime of the Paris Convention, the Steering Committee of the Nuclear Energy Agency included “the installations for the disposal of nuclear substances” under the scope of the Convention (18). By this it has been made absolutely clear that the operator of a repository is in principle to be considered as an operator of a nuclear installation and thus is liable under the Paris Convention during the operational phase, when radioactive waste is being emplaced into the facility. Further, under the new liability regime, as established under the Amended Paris Convention, also “installations for the disposal of nuclear substances” are to be considered as „nuclear installations“, irrespective whether in the operational or in the “post-closure” phase. This will be also applicable to the future shared (international) repositories.

There hasn't been a comparable development in the liability regime under the Vienna Convention. It is a matter of fact, that the Vienna Convention provides in its Article II.2., that the Contracting Party may provide by legislation that a person handling radioactive waste may, at his request and with the consent of the operator concerned, be designated or recognised as operator in the place of that operator in respect of such radioactive waste respectively. Although this provision was receipted also in the Amended Vienna Convention, it is not considered to be practicable for the needs of the radioactive waste management today. Further, the problem of repositories hasn't been addressed explicitly neither by the Protocol of 1997. However, the Amended Vienna Convention do provide, that the Board of Governors of the IAEA can enlarge the liability regime also to other installations “in which there are nuclear fuel or radioactive products or waste” (19).

Consequently, following observations are to be made with regard to the relations between the Vienna Convention and the repositories for spent fuel and radioactive waste:

1. With respect to the definition of “nuclear installations”, the wording of the Vienna Convention is very much similar that those of the Paris Convention. Taking the need to expand the scope of the application of the Paris Convention on the repositories into regard, one can only hardly argue, that the Vienna Convention is *per se* applicable to these installations (20).

2. If not covered by the liability regime of the Vienna Convention, the operator of the repository will not bear liability under this instrument. Consequently, there will be no transfer of liability and the operators of installations, from which radioactive waste is originating, will remain liable also after the disposal in the repository. Such legal situation represents a major obstacle to further international co-operation in the area of radioactive waste management and in particular, with regard to a potential shared (international) repository.

3. Some Contracting Parties to the Vienna Convention are aware of this situation and do interpret the situation in the way, the Vienna Convention is applicable also on the repositories. In this way, they aim to address the problems described above. However, an international approach is needed more than a national solution here to solve the issue.

III.

With respect to the prospective shared (international) repository, another liability issues are arising.

Several options of organisation arrangements are currently under discussion, in particular that of a commercial organisation and of a non-profit organisation (21). A third possibility is that the major nuclear States have such strong security concerns that they offer a "free" service to small or new nuclear power nations (22). With respect to the "operational" phase of the shared repository, the host State will need to design an operator, i.e. subject liable under the liability framework established by international conventions in each of the proposed scenarios.

Further, there is a common understanding, that liability regime, as established under the existing international conventions, does not represent a viable option for the repositories in the "post-closure" phase (23). This is in particular due to the following reasons:

1. In the "post-closure" phase, the risks arising from the installation for human health and property will decrease rapidly. Therefore, it will be not viable to insist on the existence of mandatory insurance for the whole duration of this waste.

2. Problems can arise during this phase with identifying the subject liable, as the "post-closure" phase will last for hundreds of years. According to existing scenarios, the repository will be monitored during certain time and transferred to the State in certain phase (24).

3. However, there will be still certain risk arising from the existence of the repository. Damage can arise e.g. as a consequence of an earthquake also during the "post-closure" phase. Consequently, there will be still a need for an appropriate liability scheme covering this type of installation.

Consequently, option of transferring of liability to the State has been proposed (25). With respect to the shared repository, question arises, whether this liability will be beard exclusively by the host State, or whether it will be shared by both the host State and the States of origin. In both options, the solution must be addressed in an international agreement, covering the future construction and operation of a shared (international) repository.

References

- (1) Paris Convention, Article 1.a.ii. ; Vienna Convention, Article I.1.j. There are certain modifications in these provisions in the Amended Paris Convention and in the Amended Vienna Convention.
- (2) Paris Convention, Article 1.a.i. ; Vienna Convention, Article I.1.l.
- (3) Paris Convention, Article 1.a.ii.
- (4) Paris Convention, Article 1.b.
- (5) Paris Convention, Article 6 ; Vienna Convention, Article II.5.
- (6) Paris Convention, Article 9 ; Vienna Convention, Article IV.3.
- (7) Paris Convention, Article 7.b. ; Vienna Convention, Article V. For the significantly increased liability limits see these provisions in the Amended Paris Convention and in the Amended Vienna Convention.
- (8) Paris Convention, Article 8 ; Vienna Convention, Article VI.
- (9) Paris Convention, Article 13 ; Vienna Convention, Article XI.
- (10) In the liability regime of the Paris Convention, the term "nuclear substances" is being used, meaning nuclear fuel (other than natural uranium and other than depleted uranium) and radioactive products or waste (Article 1.a.v.). In the liability regime of the Vienna Convention,

the term “nuclear material” is being used, meaning nuclear fuel, other than natural uranium and depleted uranium, capable of producing energy by a self-sustaining chain process of nuclear fission outside a nuclear reactor, either alone or in combination with some other material; and radioactive products or waste (Article I.1.h.).

In fact, neither the Paris, nor the Vienna Convention does provide for any definition of what “radioactive waste” is.

- (11) Paris Convention, Article 4.a.i. ; Vienna Convention, Article II.1.b.i.
- (12) Paris Convention, Article 4.a.ii. ; Vienna Convention, Article II.1.b.ii.
- (13) Paris Convention, Article 4.a.iv. ; Vienna Convention, Article II.1.b.iv. In this respect, the Joint Protocol Relating to the Application of the Vienna Convention and of the Paris Convention provides for a “legal bridge” between the liability regimes of the Vienna and Paris Conventions and facilitates transfer of liability between the Contracting Parties to either Paris, or Vienna Conventions.
- (14) Paris Convention, Article 1.a.ii. ; Vienna Convention, Article I.1.j.ii.
- (15) Paris Convention, Article 4.b.i. ; Vienna Convention, Article II.1.c.i.
- (16) Paris Convention, Article 4.a.i. ; Vienna Convention, Article II.1.b.i.
- (17) Paris Convention, Article 1.a.ii. ; Vienna Convention, Article I.1.j.iii.
- (18) Decision of the Steering Committee of 11 April 1984 [NE/M(84)1]. The decision was reprinted in OECD (ed), *Paris Convention, Decisions, Recommendations, Interpretations* (OECD 1990), 6.
- (19) Amended Vienna Convention, Article I.1.j.iv.
- (20) In 2005, the issue became subject of the discussion at the 4th meeting of the International Nuclear Liability Expert Group (INLEX), established under the IAEA. Here, the Group recognised, that the Amended Vienna Convention “provided the possibility for the Board of Governors to expand the definition of “nuclear installation” to include, for example, waste disposal facilities and installations in the process of decommissioning” in its Article I, Par. 2. Also, the Group concluded, that “it was premature at this time to take any action with respect to expanding the definition.” See: IAEA (ed), *The 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation – Explanatory Texts* (IAEA 2007) 27, footnote 80.
- (21) IAEA, *Viability of Sharing Facilities for the Disposal of Spent Fuel and Nuclear Waste* (IAEA 2011) 45.
- (22) *Ibid.*
- (23) E.g. P. Reyners, Underground nuclear repositories and international civil liability: the time factor’ [2014] 17 *Journal of Risk Research* 1, pp. 133-143.
- (24) *Ibid.*
- (25) *Ibid.*