Fact Sheet on Transport and Transit of Nuclear Substances

Nuclear Liability Insurance Challenges

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FACT SHEET: NUCLEAR LIABILITY INSURANCE CHALLENGES

Introduction

Organising international transport of nuclear substances (sometimes referred to as “nuclear material” under certain conventions) presents a number of challenges, including how to properly arrange insurance or other financial security to cover nuclear liability. Shipments of nuclear substances transiting through countries with different nuclear liability amounts and financial security limits applicable to transport[1] or transit[2] raise a number of issues concerning the appropriate financial security to cover the potential risks of nuclear damage during the journey, which in turn may affect the choice of possible transport routes and means of transport.

This fact sheet was developed by the Working Party on Nuclear Liability and Transport (WPNLT) established by the Nuclear Law Committee (NLC) of the OECD Nuclear Energy Agency (NEA) as Secretariat.

The main objectives of the WPNLT are to examine issues relating to the interpretation and application of international nuclear liability instruments to nuclear transport and to promote the exchange of legal information relating to nuclear liability as applicable to nuclear transport and the sharing of related experience among member countries, with an emphasis on finding practical solutions, to the benefit of nuclear operators, carriers and insurers.

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INSURANCE REQUIREMENTS RELATED TO TRANSPORT AND TRANSIT PROVIDED IN NUCLEAR LIABILTY CONVENTIONS

Compulsory financial security

All nuclear liability conventions[3] require the operator liable to have and maintain insurance or other financial security to cover the amount of its nuclear liability established in accordance with the applicable convention.[4] Moreover, subject to the exceptions below (see Subsection titled "Exceptions related to compulsory financial security requirements"), the operator liable is required to provide the carrier with a certificate issued by or on behalf of the insurer or other financial guarantor providing the security required in the conventions.[5] Such a certificate shall state the name and address of the operator liable and the amount, type and duration of the financial security, and these statements may not be disputed by the person by whom or on whose behalf the certificate was issued. The certificate shall also indicate the nuclear substances covered by the security and shall include a statement by the competent public authority that the person named is an operator within the meaning of the applicable convention.[6]

No insurer or other financial guarantor shall suspend or cancel the insurance or other financial security during the period of the carriage in question.[7]

As regards the Paris Convention, the Steering Committee for Nuclear Energy recommended to the contracting parties to the Paris Convention a model certificate of financial security for the carriage of nuclear substances [NEA/NE(2021)14, Annex 2, Appendix A]. This model certificate was designed to facilitate the process of preparing and approving the appropriate financial security by national authorities and operators, specifically for international transport of nuclear substances.

Exceptions related to compulsory financial security requirements

National law may exclude the obligation of the operator liable to provide the carrier with an insurance certificate or other financial security if the carriage takes place wholly within the national territory of a country.[8] Certain nuclear liability conventions do not require their contracting parties or any of their constituent sub-divisions to have and maintain insurance or other financial security to cover their liability as operators.[9]

Substitution of a carrier for the operator for nuclear liability purposes

National law may provide that a carrier bears nuclear liability in substitution for an operator of a nuclear installation in its territory.[10] This can only operate at the carrier's request and with the consent of an operator of a nuclear installation of the installation state, and, for the Paris Convention only, subject to a decision of the competent public authority. In such a case, the carrier shall be liable in place of that operator and considered, in respect of nuclear incidents occurring in the course of carriage of nuclear substances, as an operator of a nuclear installation situated on the territory of the country whose legislation allows for such a substitution. This includes the requirement to have and maintain insurance or other financial security to cover its nuclear liability.[11]

INSURANCE CHALLENGES RELATED TO TRANSPORT AND TRANSIT OF NUCLEAR SUBSTANCES

Different sources of nuclear liability insurance/financial security

In most cases, the nuclear liability financial security is provided by the private insurance market. However, alternative financial security mechanisms, including mutuals, self-insurance such as captives, state indemnity, bank guarantee, can also be available. Difficulties may arise in case coverage is provided by mixing different types of financial securities to cover the same shipment. The process for arranging such a coverage may be time-consuming and burdensome, which can affect the organisation of transport and may lead to its delay, as the insurance or other financial security certificates should, generally, be ready before a shipment can move. These risks should be taken into consideration while planning international transport and transit of nuclear substances.

Different limits of nuclear liability

All nuclear liability conventions provide for a minimum amount of liability of nuclear operators, which varies from one convention to another.[12] National legislation can provide for higher amounts of liability.[13] All modernised nuclear liability conventions (i.e. the Paris Convention, the Revised Vienna Convention and the CSC) also allow national legislation to establish a lower amount of liability for carriage of nuclear substances, to the extent that those substances are not considered as likely to cause significant damage compared to other nuclear installations or transports referred to in the relevant conventions. The rationale behind these provisions is to avoid burdening the operators with unjustified insurance or financial security costs. However, the reduced liability amounts shall not be lower than the relevant limits provided in the conventions.[14] In the event of a nuclear incident causing damage that exceeds the reduced liability amounts provided in the national legislation of the operator liable, the installation state of the operator liable will be required to cover the gap between these reduced liability amounts and the maximum liability amount for operators of nuclear installations situated in its territory.

Some national laws specify different limits of liability depending on the nature of nuclear substances to be transported. For instance, in Romania, the liability amount for transport of spent nuclear fuel is limited to SDR 25 million, while transport of other nuclear material is capped at SDR 5 million. National legislation in the United Kingdom provides for a range of liability between EUR 80 and EUR 1.2 billion, depending on the transported material.

Consequently, different amounts of nuclear liability may apply to the same carriage, depending on the national legislation of countries through which an international transport will cross (see also Subsection titled “Increased amounts of nuclear liability in case of transit”). An additional layer of complexity to an already challenging issue of differences in the applicable nuclear liability amounts may originate from a situation where different types of nuclear substances owned by different entities are transported in a convoy of multiple vehicles.[15] This can create legal uncertainty and further exacerbate the process for arranging the appropriate insurance or other financial security cover and should be taken into account at the outset.

Increased amounts of nuclear liability in case of transit

All nuclear liability conventions (with the exception of the Vienna Convention) expressly provide that the amount of compensation will be determined by the national legislation of the operator liable.[16] Notwithstanding the above, a country may, under certain conditions, subject the transit of nuclear substances through its national territory to an increased nuclear liability amount not exceeding the maximum amount of liability of the operator of a nuclear installation situated in its territory.[17] The risk of exposure to a higher amount of liability by nuclear operators in certain countries may influence the choice of the operator liable for transport and affect the process for preparing the relevant financial security.

Availability of financial security to cover all heads of damage and the extended prescription period

All modernised nuclear liability conventions provide for a wider range of nuclear damage suffered, such as economic loss, the cost of preventive measures and of measures of reinstatement of impaired environment.[18] Moreover, the Paris Convention and the Revised Vienna Convention establish the prescription period for loss of life or personal injury claims of 30 years following the nuclear incident[19] and allow the national legislation to provide for a longer period. The Vienna Convention and the CSC establish a shorter period of 10 years for claims for loss of life or personal injury but also allow the law of the installation state of the operator liable to provide a longer period for extinction of claims.[20]

Not all the heads of damage provided under the modernised nuclear liability conventions, such as damage to the environment or the 30-year prescription period in respect of loss of life or personal injury, are covered by the private insurance market. In certain countries, the non-insurable heads of damage or insurance gaps are covered by financial securities provided by the state, which may not be available to foreign operators or carriers who would be bearing nuclear liability.[21] It can influence the choice of the entity bearing nuclear liability or the moment in time when nuclear liability would be transferred between the parties to a contract, thus affecting the process of establishing the appropriate financial security.

Transfer of nuclear liability

All nuclear liability conventions govern the transfer of nuclear liability between the concerned operators. As regards the operators from countries party to the same nuclear liability convention, the transfer of nuclear liability can occur either pursuant to the express terms and conditions of a written contract, or in the absence of such a contract, when the other operator takes charge of the nuclear substances.[22] Concerning transport between operators whose installation states do not have treaty relations,[23] the transfer of nuclear liability occurs either after unloading of nuclear substances from the means of transport in the territory of the state of destination (for transport from a convention state to a non-convention state), or after loading of nuclear substances on the means of transport in the territory of the state of departure (for transport from a non-convention state to a convention state).[24] To facilitate the process of preparing the financial security cover for transport or transit, the moment in time when nuclear liability is transferred from the sending operator to the receiving operator should be clearly determined in the contract, as the nuclear liability conventions do not specify the meaning of the terms “taking charge”, “unloading”, etc.

Geographical overlap of nuclear liability conventions

Application of provisions of nuclear liability conventions related to transport of nuclear substances between operators whose installation states do not have treaty relations may lead to an overlap of geographical scopes of the relevant conventions, resulting in different nuclear liability regimes applying to the same shipment (including the compulsory financial security requirements). This can lead to a situation where, according to different nuclear liability conventions to which their respective installation states are parties and different national legislations, both the sending and receiving operators simultaneously bear nuclear liability for the same nuclear damage arising out of a nuclear incident. This could, in turn, result in legal uncertainty and give rise to certain nuclear liability challenges in the event of a nuclear incident causing nuclear damage, including:

- the definition of nuclear damage to be compensated,
- the entity liable for indemnifying victims,
- the applicable liability amount, and
- the geographical scope of compensation.

Consequently, any potential overlap between the nuclear liability regimes applicable to transport or transit of nuclear substances should be carefully considered when organising the shipment and preparing the relevant financial security cover.

Exclusions of nuclear substances from nuclear liability conventions

All nuclear liability conventions exclude from their scope of application certain categories of nuclear substances (e.g. radioisotopes which have reached the final stage of fabrication),[25] subject to specific requirements being fulfilled, to ensure that the risk associated with their transport or transit may be dealt with under other legal regimes (e.g. general tort law, product liability). Each state implements or applies those exclusions based on its national legislation, which may result in discrepancies in the qualification of nuclear substances to be transported by different stakeholders and may affect the organisation of an appropriate insurance or financial security cover (either a compulsory nuclear liability financial security or a conventional cover, when relevant). To improve visibility on the relevant financial security and insurance requirements, the qualification of nuclear substances in the different countries that the international carriage may cross should be verified at the stage of preparation of a relevant shipment.

Conclusion

A number of factors should be considered when arranging the appropriate financial security to cover international transport and transit of nuclear substances, including:

- Proper identification of the operator liable is key (in certain countries, the carrier can be considered as an operator, subject to certain conditions being met);
- Transfer of nuclear liability from the sending operator to the receiving operator should be expressly agreed in the contract in advance; the Paris Convention operators should in addition comply with the requirement of having a direct economic interest in nuclear substances being transported to allow such a transfer;
- Knowledge of national legislation of countries the carriage may cross enhances the visibility of the requirements necessary to organise the appropriate insurance or financial security. Relevant national requirements should be checked at an early stage of preparation of each transport/transit;
- Depending on the contractual set up and/or applicable national legislation, a mix of financial security instruments or multiple policies/securities may need to be put in place to cover the same shipment; and
- Concurrent nuclear liability for both the sending and the receiving operators, along with a duplication of financial security covers, may arise in the event of geographical overlap of nuclear liability conventions.

NOTES

1 For the purposes of this paper, "transport" means an international or domestic carriage of nuclear substances by any means of transportation (i.e. sea, air or land) beginning with the departure from the sending operator's nuclear installation and ending with the arrival at the receiving operator's nuclear installation.

2 For the purposes of this paper, "transit" means temporary movement of nuclear substances within the territory of a state that is not the state of departure, where the sending operator is situated, or the state of destination, where the receiving operator is situated.

3 Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960, as amended by the Additional Protocol of 28 January 1964, by the Protocol of 16 November 1982 and by the Protocol of 12 February 2004 (Paris Convention); 1963 Vienna Convention on Civil Liability for Nuclear Damage (Vienna Convention); 1997 Protocol to Amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage (Revised Vienna Convention); and 1997 Convention on Supplementary Compensation for Nuclear Damage (CSC). For the purposes of this paper, the "Vienna Conventions" will hereinafter refer to the Vienna Convention and the Revised Vienna Convention jointly; the term "IAEA Conventions" refers to the Vienna Convention, the Revised Vienna Convention and the CSC.

4 See Article 10(a) of the Paris Convention, Article VII.1 of the Vienna Convention, Article VII.1(a) of the Revised Vienna Convention, Article 5.1(a) of the CSC Annex. As regards the Paris Convention, the Steering Committee for Nuclear Energy adopted an interpretation concerning financial security for the operator's liability [NE(67)25], which provides that: "The obligation which arises from the financial security referred to in Article 10(a) of the Paris Convention, intended to cover liability for the purpose of Articles 3 and 4 thereof, shall not be altered by the fact that the damage is already covered by other insurance or financial security on the understanding that this does not affect the provisions of Article 6(h) of the Convention."

5 See Article 4(d) of the Paris Convention and Article III of the Vienna Conventions.

6 *Ibid*.

7 See Article 10(d) of the Paris Convention, Article VII.4 of the Vienna Conventions and Article 5.4 of the CSC Annex.

8 See Article 4(d) of the Paris Convention and Article III of the Revised Vienna Convention.

9 See Article VII.2 of the Vienna Conventions and Article 5.2 of the CSC Annex.

10 See Article 4(e) of the Paris Convention, Article II.2 of the Vienna Conventions and Article 3.2 of the CSC Annex.

11 As regards the Paris Convention, the Steering Committee for Nuclear Energy adopted an interpretation concerning substitution of a carrier for the operator [NEA/NE(2021)14, Annex 2, Appendix B], which states that: "Whether or not any Contracting Party itself makes use of the provisions of Article 4(e) of the Paris Convention or Article II(2) of the Vienna Convention, all Contracting Parties must legally recognise a carrier, who is properly substituted for the operator of a nuclear installation situated in one of the Contracting Parties' countries, as an operator for all the purposes of the Conventions, even if they do not themselves provide for such substitution for their own operators." This interpretation was supplemented by another interpretation concerning rights of subrogation of a carrier [NEA/NE(2021)14, Annex 2, Appendix C], which provides that: "When a carrier accepts the obligations of an operator by being substituted for him in accordance with Article 4(e) of the Convention, he thereby renounces the taking of advantage of the right of subrogation given to a carrier against the operator by Article 6(d)."

12 The so-called "basic liability" or "reference amounts" provided in the nuclear liability conventions are as follows: Paris Convention: EUR 700 million (Article 7(a) of the Paris Convention), Vienna Convention: USD 5 million (Article V.1 of the Vienna Convention), Revised Vienna Convention: SDR 300 million (Article V.1 of the Revised Vienna Convention), CSC: SDR 300 million (Article 4.1(a) of the CSC Annex).

13 For information on the currently applicable nuclear liability amounts and financial security limits, see the Nuclear Operators' Third Party Liability Amounts and Financial Security Limits table, available at: www.oecd-nea.org/liability-amounts.

14 The reduced liability amounts for transport provided in the nuclear liability conventions are as follows: Paris Convention: EUR 80 million (Article 7(b)(ii) of the Paris Convention), Revised Vienna Convention: SDR 5 million (Article V.2 of the Revised Vienna Convention), CSC: SDR 5 million (Article 4.2 of the CSC Annex).

15 As regards the situation where nuclear damage gives rise to the liability of more than one operator, all nuclear liability conventions provide that in case of a nuclear incident involving nuclear substances in the course of carriage in one and the same means of transport, or involving such substances where they are stored incidental to the carriage in one and the same nuclear installation, the total amount of liability of the concerned operators is limited to the highest liability amount applicable to any one of them. See Article 5(d) of the Paris Convention, Article II.3(b) of the Vienna Conventions and Article 7 of the CSC Annex.

16 See Article 7(d) of the Paris Convention, Article V.3 of the Revised Vienna Convention and Article 6.1 of the CSC Annex.

17 This possibility is expressly provided in Article 7(e) of the Paris Convention and Article 6.2 of the CSC Annex.

18 See Article 1(a)(vii) of the Paris Convention, Article I.1(k) of the Revised Vienna Convention and Article I(f) of the CSC.

19 See Article 8(a)(i) of the Paris Convention and Article VI.1(a)(i) of the Revised Vienna Convention.

20 See Article VI.1 of the Vienna Convention and Article 9.1 of the CSC Annex.

21 For information on financial cover available in the contracting parties to the Paris Convention, see the Contracting Parties to the Paris Convention: Availability of Financial Security to Cover Heads of Damage as Required Under the Paris Convention table, available at: www.oecd-nea.org/cppc-financial-security.

22 See Articles 4(a) and (b) of the Paris Convention, Articles II.1(b) and (c) of the Vienna Conventions and Article 3.1(b) and (c) of the CSC Annex. As regards the transfer of liability between the Paris Convention operators, pursuant to Article 4(c) of the Paris Convention, only an operator with a direct economic interest in nuclear substances being transported may assume liability for nuclear damage caused by a nuclear incident occurring during that transport. For more explanation on the rationale behind this requirement, see paragraph 39 of the Exposé des motifs of the Paris Convention.

23 In the context of transport between states with no treaty relations, the nuclear liability conventions use the term «a person within the territory of a non-contracting state» rather than «operator». See Articles 4(a)(iv) and (b)(iv) of the Paris Convention), Articles II.1(b)(iv) and (c)(iv) of the Vienna Conventions and Articles 1(b)(iv) and (c)(iv) of the CSC Annex. The term "person" is defined only in the Vienna Conventions and means "any individual, partnership, any private or public body whether corporate or not, any international organization enjoying legal personality under the law of the Installation State, and any State or any of its constituent sub-divisions." See Article I.1(a) of the Vienna Conventions.

24 *Ibid*.

25 See Article 1(a)(iv) of the Paris Convention, Article I.1(g) of the Vienna Conventions and Article 1.1(e) of the CSC Annex.