

Nuclear Liability Laws

The principles of the nuclear liability regime, including their application to the case of transport, are described in the *IAEA Handbook on Nuclear Law*¹, and will not be repeated in this paper. Rather, this paper examines some specific aspects of liability during transport, and particularly draws on some of the work of the IAEA International Expert Group on Nuclear Liability (INLEX). In that regard, particular reference is made to the *Explanatory Texts* published in 2004².

1. Security during transport

All conventions provide an exoneration where the damage is caused by armed conflict, hostilities, civil war or insurrection. That exoneration is narrowly drawn, and does not extend to terrorism³. Beyond that exoneration, the nuclear liability regime does not differentiate between safety incidents and security incidents. In either case, the responsible operator is strictly and exclusively liable. This places a heavy burden on operators to ensure that any carrier with which they contract has appropriate security measures, and an appropriate security culture, in place. In particular, the liable operator should ensure, under the contract of carriage, that the carrier's security measures comply with the Convention on the Physical Protection of Nuclear Material and with INFCIRC/225/Rev.5⁴.

2. Amounts of compensation

Although the same general principles of nuclear liability law apply under all the Conventions, there is a significant variation in the minimum amounts of compensation which operators must make available. The Conventions allow States Parties to cap operators' liability, although an increasing number of states are declining to do so. The amounts prescribed vary from 15 million SDRs⁵ under the 1960 Paris Convention⁶ to 700 million Euros⁷ under the 2004 Paris Convention (which is yet to

¹ International Atomic Energy Agency, Vienna, 2003; http://www-pub.iaea.org/MTCD/Publications/PDF/Pub1160_web.pdf

² *The 1997 Vienna Convention on Civil Liability for Nuclear Damage and the 1997 Convention on Supplementary Compensation for Nuclear Damage Explanatory Texts: A comprehensive study of the Agency's nuclear liability regime by the IAEA International Expert Group on Nuclear Liability (INLEX) to aid the understanding and authoritative interpretation of that regime*, International Atomic Energy Agency International Law Series 3, Vienna, 2007; <http://www-pub.iaea.org/books/IAEABooks/7594/The-1997-Vienna-Convention-on-Civil-Liability-for-Nuclear-Damage-and-the-1997-Convention-on-Supplementary-Compensation-for-Nuclear-Damage-Explanatory-Texts>.

³ "In the light of recent events in international relations, it seems important to point out that an act of terrorism is not, per se, a cause of exoneration from nuclear liability; this is confirmed by the *travaux préparatoires* of both the 1963 Convention and the 1997 Protocol", *Explanatory Texts*, page 48.

⁴ http://www-pub.iaea.org/MTCD/Publications/PDF/Pub1481_web.pdf

⁵ Special Drawing Rights of the International Monetary Fund.

⁶ The Steering Committee of the OECD Nuclear Energy Agency has recommended that States Parties to the Paris Convention establish a maximum operator liability of 150 Million SDRs; in practice, many States Parties set higher liability amounts, or even unlimited liability.

⁷ At 28 October, approximately 625 million SDRs.

enter into force). It should be noted that the 2004 Paris Convention allows States Parties to set a lower minimum amount of liability in the case of transport of 80 million Euros⁸.

Particular mention must be made of the amounts under the 1963 Vienna Convention. Article V of that Convention provides:

1. The liability of the operator may be limited by the Installation State to not less than US \$5 million for any one nuclear incident.
2. Any limits of liability which may be established pursuant to this Article shall not include any interest or costs awarded by a court in actions for compensation of nuclear damage.
3. The United States dollar referred to in this Convention is a unit of account equivalent to the value of the United States dollar in terms of gold on 29 April 1963, that is to say US \$35 per one troy ounce of fine gold.
4. The sum mentioned in paragraph 6 of Article IV and in paragraph 1 of this Article may be converted into national currency in round figures.

That provision was drafted at a time of fixed exchange rates, when the United States dollar was pegged to the gold standard. In 2007, INLEX discussed how it should be interpreted, given the changes in the international monetary system since 1963. The Group concluded that the unit of account was “US\$35 per one troy ounce of fine gold” as provided in Article V(3). Accordingly, the correct minimum amount of liability under the Convention was dependent on the day-to-day price of gold, and that it was then currently equivalent to approximately \$US93 million. Subsequent increases in the price of gold have effectively increased that minimum amount further. The liability limit in respect of any particular incident would be calculated by reference to the value of gold on the day of that incident.

3. Insurance

The Conventions require that operators hold prescribed amounts of financial security, which is normally provided by way of insurance. The 1997 revisions to the Vienna Convention, the Convention on Supplementary Compensation and the 2004 revisions to the Paris Convention introduced a number of new heads of damage which were not covered by commercial insurance. The prescription period for claims was also generally extended to 30 years after the incident. In addition, heightened concerns over terrorism after 9/11 saw many insurers insert exclusions for terrorism in their policies. Since then, insurers have provided some coverage for the new types of damage, and for terrorism. However, there is still no coverage for claims lodged more than 10 years after the incident, and a limited amount of cover in these other areas.

In such circumstances, statutory requirements that operators hold full coverage for potential claims cannot be complied with. INLEX has discussed this issue regularly over recent years. A number of states have effectively decided to fill the gaps in commercially available insurance coverage by establishing premiums which are

⁸ Article 7(b)(ii).

quasi-commercial in nature – at least for the period until commercial insurance becomes available – by providing a form of insurance to the industry.

4. Liability for the transport of other hazardous materials

In 2004, INLEX commissioned a study on “International Instruments on Civil Liability applicable to other Ultrahazardous Activities”. INLEX member Dr Natalie Horbach undertook a detailed comparison of the provisions of the nuclear liability treaties with those covering liability for other ultrahazardous activities, particularly transport of hazardous materials. Her conclusion was that the nuclear liability treaties, especially as revised, are consistent with general developments in, and the main civil liability features of, other international agreements regarding hazardous or dangerous activities. There have been no developments in international law since that time which would change that conclusion.

The primary instruments covering transport of other hazardous materials are:

- the Oil Pollution Conventions⁹, adopted under the auspices of the International Maritime Organisation, which place a strict liability on shipowners¹⁰. The amounts of compensation are less than those under revised nuclear liability conventions¹¹; and
- the HNS Convention¹², also adopted under the auspices of the International Maritime Organisation. The Convention was adopted in 1996, but is not yet in force (in order to expedite entry into force, the IMO adopted a Protocol to the Convention in 2010). Like the Oil Pollution Conventions, shipowners are subject to strict liability. Again, the amounts of compensation are less than those under revised nuclear liability conventions¹³.

The primary difference between these regimes and the nuclear liability regime (apart from the disparity in amounts of compensation) is that under the nuclear liability conventions the operator of the responsible nuclear installation, rather than the carrier, is liable.

⁹ There are a number of instruments in this field, and the interrelationship between them is somewhat complex. See <http://www.iopcfund.org> for detail.

¹⁰ *The International Regime for Compensation for Oil Pollution Damage: Explanatory note prepared by the Secretariat of the International Oil Pollution Compensation Funds*, September 2011.

¹¹ For incidents occurring after 1 November 2003, a compensation fund takes total compensation available to 203 million SDR; *ibid.*

¹² International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 as revised by the Protocol of 2010 to the Convention (2010 HNS Convention).

¹³ Like the system created by the Convention on Supplementary Compensation, there are two tiers of liability. Tier one provides between 10 and 115 million SDR (depending on the tonnage of the ship) covered by compulsory insurance taken out by shipowners, who would be able to limit their liability. In those cases where the insurance does not cover an incident, or is insufficient to satisfy the claim, a second tier of compensation will be paid from a Fund, made up of contributions from the receivers of Hazardous and Noxious Substances. Contributions will be calculated according to the amount of Hazardous and Noxious Substances received in each Member State in the preceding calendar year. This fund takes the total amount of compensation available up to 250 million SDR.

5. Radioactive materials to which the Conventions do not apply

The definitions in the Conventions exclude some materials from their scope. The first category of material excluded is “Natural uranium, depleted uranium or uranium ores”. Given that these substances pose a low risk¹⁴, this exclusion is unlikely to be of significant effect.

Secondly, the Conventions exclude “Radioisotopes which have reached the final stage of fabrication so as to be usable for any scientific, medical, agricultural, commercial or industrial purpose”. This definition includes some very high-activity sealed radioactive sources, exposures to which have caused deaths¹⁵ (although not in transport). This exclusion cannot be justified by reference to low hazard levels; rather, it is explicable by the fact that the use and management of such sources does not fit with the regime created by the Conventions. As noted in section 4, the Conventions assign liability to the operator of a nuclear installation, even in the case of transport. However, sealed radioactive sources are, once sold, no longer under the control of the operator of the nuclear installation where they were manufactured, or of the operator’s agent. If such a source were, years later, to escape from control and cause damage, it would not be in accord with any accepted notions of justice or equity to hold the operator of that nuclear installation strictly liable. This is not to say, however, that there should not be a similar – even parallel – liability system covering such sources, including their transport; this may be a matter which INLEX could consider in the future.

6. The real “gaps” in the nuclear liability regime

Since the adoption of the revisions to the Vienna Convention and the Convention on Supplementary Compensation were adopted in 1997, concerns have been raised about some of the details of those instruments. Most of those concerns are relatively minor. However, there is no doubt that the minimum amounts provided, even under the revised Conventions, are inadequate to properly compensate a large accident in a nuclear power plant. The Fukushima accident has shown the force of that criticism; the current estimated compensation bill of 36 billion SDRs is obviously many times greater than the approximately 600 million special Drawing Rights available under the CSC¹⁶. Whilst there may not be a credible transport accident or sabotage scenario which leads to radioactive releases of the magnitude seen at Fukushima, it would appear to be to the benefit of the industry (in public acceptance terms) if governments were to adopt higher caps on liability, or indeed make liability unlimited¹⁷.

¹⁴ In radiological terms; the regime does not deal with chemical or general occupational health and safety hazards.

¹⁵ See, for example, IAEA publication *The Radiological Accident in Goiânia*, <http://www-pub.iaea.org/books/IAEABooks/3684/The-Radiological-Accident-in-Goinia>.

¹⁶ Japan does not impose a cap on liability, so in the case of Fukushima the inadequacy or otherwise of the cap does not arise.

¹⁷ There is a trend in Europe towards making liability unlimited, in line with the “polluter pays” principle and general public expectations. Even in that case, however, operators could only be required to take out a fixed amount of insurance; there is no such thing as an unlimited insurance policy.

The larger problem with the nuclear liability regime is the lack of adherence to the revised Conventions. The 1997 Protocol to the Vienna Convention has nine parties; four states have ratified the Convention on Supplementary Compensation, which is not yet in force; and only two states have yet ratified the 2004 Protocol to the Paris Convention¹⁸. While many of the major nuclear states have domestic legislation in place which is largely consistent with the updated regime, their failure to ratify the revised conventions gives rise to understandable doubts among other states as to whether they will really be compensated in the event of an accident – particularly a transport accident, given that the citizens (and voters) of the Installation State¹⁹ may not be affected. Adherence by the major shipping states to the conventions would thereby give increased confidence to potential transit states.

¹⁸ States Parties to the Paris Convention which are also members of the European Union (which is almost all of them) are bound by a European Commission decision that none should ratify the 2004 Protocol until the last of them is ready to do so; arguably, uniformity has been achieved at the expense of potential victims of an accident.

¹⁹ The state where the responsible operator is located.