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NUCLEAR LIABILITY IN SINGLE/JOINT NUCLEAR SHIPMENTS

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ABSTRACT

Many international conventions and legislation apply to the transport of nuclear materials worldwide. Some countries have signed up to international conventions e.g. the Paris Convention¹, Brussels Convention², Vienna Convention³ and the Convention on Supplementary Compensation⁴ (CSC), whilst others have their own legislation e.g. USA, Japan, Switzerland. While each legislation looks to simplify the nuclear liabilities of parties involved in a shipment, when shipments cross the boundaries of the scope of such legislation or when nuclear materials from/to different operators are on the same vessel, the matter becomes more complex.

This paper will describe how INS has considered nuclear liabilities for single and mixed shipments travelling between different jurisdictions and the solutions used referring to the issues below (mainly in context of the Paris Convention as INS is based in the UK):

When the responsible operator for a nuclear shipment under relevant nuclear legislation is each of the following:

- Operator of an installation from where materials are sent
- Operator of an installation to where materials are being sent
- Operator on whose site the materials have been

When there is more than one responsible operator, which operator assumes liability:

- Joint and several liability

¹ Convention on Third Party Liability in the Field of Nuclear Energy of 29th July 1960 as amended by the Additional Protocol of 28th January 1964 and by the Protocol of 16th November 1982; http://www.oecd-nea.org/law/nlparis_conv.html

² Convention of 31st January 1963 Supplementary to the Paris Convention of 29th July 1960, as amended by the additional Protocol of 28th January 1964 and by the Protocol of 16th November 1982; <https://www.oecd-nea.org/law/nlbrussels.html>

³ Vienna Convention on Civil Liability for Nuclear Damage of 1963;
<http://www.iaea.org/Publications/Documents/Infcircs/1996/inf500.shtml>

⁴The Convention on Supplementary Compensation for Nuclear Damage adopted on 12 September 1997 in Vienna; <http://www.iaea.org/Publications/Documents/Conventions/supcomp.html>

- Maximum aggregate liability
- Maximum individual liability
- Jurisdiction

Where the applicable convention does not provide a single jurisdiction, which jurisdiction applies?

Gaps in the strength of covenant offered by the different operators.

Practical examples:

- Single consignment from the UK to Spain (Paris Convention country to Paris Convention country)
- Mixed Shipment :
 1. Single consignment: Japan to France (Non-Paris Convention country to Paris Convention country⁵);
 2. Single consignment: Italy to France (Paris Convention country to Paris Convention country);
 3. Transport of both consignments on one vessel from France to USA (Paris Convention country to Non-Paris Convention country).

INTRODUCTION

The paper will show how the team at INS has applied the Nuclear Liability Regime under the Paris Convention given its extensive experience in the area of single and joint international nuclear shipments and, in the context of hypothetical scenarios, provide examples of the types of solutions that INS has used in the past such as customer indemnities and nuclear liability insurance while ‘balancing’ indemnities from co-consigning operators. To provide some context and background, this paper will also briefly examine how liability under the Paris Convention applies to international transports of nuclear material, and how liability is channelled to the responsible party in various circumstances before moving onto examining the practical examples.

BACKGROUND AND CONTEXT

The Paris Convention on Third Party Liability in the Field of Nuclear Energy is a 1960 Organisation for Economic Cooperation and Development (OECD)⁶ Convention on liability and compensation for damage caused by a nuclear incident. The convention entered into force on 1 April 1968 and has been amended by protocols in 1964, 1982 and 2004.

The convention:

- Limits liability to a certain amount and limits the period for making claims;
- Channels liability exclusively to the operator of the nuclear installation;

⁵ Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom; (Austria & Luxembourg both signed the 1960 Paris Convention, the 1964 and 1982 Protocols but have not yet ratified these instruments. Switzerland has signed and ratified the 1960 Paris Convention and the 1964, 1982 and 2004 Protocols but its ratification will only enter into force once the 2004 Protocol enters into force.

⁶ <http://www.oecd.org/>

- Imposes strict liability on the nuclear installation operator, regardless of fault;
- Makes the nuclear installation operator exclusively liable for damage resulting from nuclear incidents at its installation or during the transport of nuclear substances to and from that installation;
- Requires the nuclear installation operator to have financial security equivalent to its liability;
- In general, provides that the courts of the state in whose territory the nuclear incident occurred deal with compensation claims;
- provides for compensation for injury to or loss of life of any person, and for damage to, or loss of any property caused by a nuclear accident in a nuclear installation or during the transport of nuclear substances to and from installations;
- Does not cover damage to the nuclear installation itself.

The Paris Convention is currently undergoing changes under the 2004 Protocol⁷ mainly in relation to operator liability limits, scope and application. These changes are in process of being implemented in the UK following a Public Consultation by the UK Department of Energy & Climate Change ('DECC')⁸. What will not change significantly is the regime applicable to multiple-operator consignments as opposed to single-operator consignments. This paper will concentrate on the current position as the details of the changes are beyond the scope of this paper.

The Paris Convention system works on the basis of identifying the operator responsible for a particular nuclear incident. Of course this is relatively easy in the event that a nuclear incident occurs at the site of a nuclear installation (i.e. – a nuclear licensed site in the UK) but even in the event of incidents occurring during the course of carriage, the provisions of Article 4 of the Paris Convention and section 7 of the Nuclear Installations Act 1965 ("NIA")⁹ create a system which ensures that liability will always sit with one single operator and, in effect, an operator shall only be absolved of liability at the point in time that liability transfers to another operator.

One of the fundamental and well understood principles of the Paris Convention is the concept of the operator liability limit. Article 7(b) sets a 'default' operator liability limit (for operators of all Paris Convention states) at 15 million Special Drawing Rights ("SDRs")¹⁰ but, under Article 7(b)(i) contracting states are entitled to set a higher or lower (subject to a minimum of 5m SDRs) liability limit for their own operators. The UK operator liability is currently set at £140m (approximately 140m SDRs), pursuant to section 16(1) of the NIA. It is also a fundamental principle of both the Paris Convention and the NIA that operators must have in place insurance or other financial security to cover their respective operator liability limits (Art 10).

The Paris Convention does not just apply to nuclear incidents occurring on nuclear sites but also to incidents occurring during carriage. As stated above, the provisions of the Paris Convention have a certain symmetry to them which is supposed to ensure that only one operator will be liable for a nuclear incident. However, there may be rare occasions where

⁷ 2004 Protocol to Amend the Paris Convention, <https://www.oecd-nea.org/law/paris-convention-protocol.html>

⁸ <https://www.gov.uk/government/organisations/department-of-energy-climate-change>

⁹ <http://www.legislation.gov.uk/ukpga/1965/57>

¹⁰ The SDR is an international reserve asset created by the International Monetary Fund. Its value is based on a basket of four key currencies, and SDRs can be exchanged for freely usable currencies; <http://www.imf.org/external/np/exr/facts/sdr.htm>

liability may attach to more than one operator (for example, where more than one operators' materials are carried on a single means of transport and it is not possible to tell whose material caused any particular loss/damage) in which case the Paris Convention applies a principle of joint and several liability, which will be considered in more detail below.

Finally the Paris Convention seeks to ensure that all claims arising in connection with a nuclear incident are heard in the courts of a single jurisdiction and the provisions of Art 13 of the Paris Convention address this.

CHANNELLING OF LIABILITY DURING CARRIAGE – PARIS CONVENTION ART 4(a)

The main theme underpinning Art 4(a) of the Paris Convention is that, to the extent that the Paris Convention applies, an operator shall be liable for his nuclear material (or material which he has had in his possession) until such time as liability passed to another operator.

Liability is passed to another operator by written agreement or, in simple terms, when another operator takes charge of the relevant nuclear substances.

For example, if materials were sent from the UK, then the UK operator would remain liable until the earlier of:

- liability being assumed by another operator pursuant to a written agreement;
- materials entering the site of another operator or otherwise taken under the control of another operator;
- the materials were unloaded in the territory of a Non-Paris Convention country.

It's evident at this point that the Paris Convention applies on the high seas (as the high seas are not, by implication, within the territory of a Non-Paris Convention country).

It is also worth noting that, in the absence of anything to the contrary, a Paris convention operator who sends material to a Non-Paris Convention country will remain the responsible operator (for the purposes of the Paris Convention) until the material is unloaded in the territory of the Non-Paris Convention country.

The provisions of Art 4(a) of the Paris Convention are implemented into English law in section 7(2)(b) of NIA, although NIA will only apply to UK operators or, in limited circumstances, foreign operators where the incident occurs in UK territory.

CHANNELLING OF LIABILITY DURING CARRIAGE – PARIS CONVENTION ART 4(b)

Art 4(b) provides for channelling of liability to the operator of the installation to where the materials are being sent. These provisions are intended to have the equal and opposite effect to those provisions in Art 4(a), ensuring, in theory, that there is a seamless hand over of liability from one operator to another.

It will be evident that in the situation where materials belonging to more than one operator are carried on one and the same means of transport then there is the possibility that there will be more than one 'responsible operator'. This will be considered in more detail below.

As with Art 4(a), the provisions of Art 4(b) of the Paris Convention are implemented into English law in section 7(2)(b) of NIA, although NIA will only apply to UK operators or, in limited circumstances, foreign operators where the incident occurs in UK territory.

CHANNELLING OF LIABILITY DURING CARRIAGE – PARIS CONVENTION ART 5(c)

The provisions of Art 5(c) apply to transports of nuclear material involved in a nuclear incident where the nuclear material has been in more than one nuclear installation. Whilst a little more complex, these reflect the same basic principle as discussed above - to the extent that the Paris Convention applies, a single operator shall be liable for his nuclear material (or material which he has had in his possession) until such time as liability passes to another operator.

Art 5(c) might apply, for example, where nuclear materials are transported from a nuclear installation in a particular Paris Convention territory to a second nuclear installation and then are being transported to a third nuclear installation when a nuclear incident occurs. In this scenario Art 5(c) provides that only the operator of the last nuclear installation in which the nuclear material was before the damage was caused, or has subsequently assumed liability for the nuclear material, shall be liable for the damage arising from the nuclear incident.

Similar provisions are included in section 7(2)(c) of NIA although, as discussed earlier, these only apply to UK operators or, in limited circumstances, foreign operators.

NO SINGLE RESPONSIBLE OPERATOR – PARIS CONVENTION ART 5(d) – JOINT AND SEVERAL LIABILITY

The language in Art 5(d) provides that liability shall be joint and several where 'damage gives rise to more than one responsible operator in accordance with the Paris Convention'. In theory, this should be a rare occurrence as, the purpose of the relevant provisions in Arts 4(a)/4(b) and 5(c) and relevant domestic legislation is to channel liability to one operator. In practice however, there may be scenarios where a nuclear incident occurs but it is not possible to show loss was caused by one operator's material rather than the other (as required by Art 3(a)).

In the particular case of shared transports Art 5(d) applies the principle that the aggregate liability of the responsible operators shall be capped at an amount equal to the higher of the two (or more) relevant operator liability limits – as determined in accordance with Art 7(b) and the relevant domestic legislation.

Art 5(d) goes on to provide however that no individual operator will be liable, in respect of a nuclear incident, to pay more than the amount established in respect of it in Art 7(b) (i.e. – that operator's liability limit). In essence, this means that whilst the operators have joint and several liability, it will only be truly joint and several where the operators have equal operator liability limits – in other situations, the operator with the higher liability limit has a greater financial exposure than the other. Whilst this after all leaves each operator in the position they would have been in, in the absence of the joint shipment (i.e. – each liable to the extent of their respective operator liability) – a practical consequence might be that the operator with the higher limit becomes a more attractive target for claimants and therefore could face the majority of the claims resulting from such an incident.

JURISDICTION – PARIS CONVENTION ART 13

In the first instance, jurisdiction will lie with the territory where the incident occurred. Where the incident occurs outside the territory of a contracting state or the incident location cannot be determined, where the incident occurs on the high seas for example, the incident therefore does not occur in the territory of a Non-Paris Convention country (therefore the Paris Convention applies in accordance with Art 2) and jurisdiction sits with the courts of the responsible operator in accordance with Arts 4(a)/(b) and/or 5(c).

It might also be the case that the incident occurred over a period of time during which the material passed through various geographic locations but it is not possible to determine precisely where the 'incident' (ie – that particular emission of radiation which caused the relevant loss/damage) occurred.

Where Arts 13(a)/13(b) do not provide a single jurisdiction, and there is some sort of travelling incident occurring both in and outside the territory of a Paris Convention country – for example, an incident which occurs at the time that a vessel is leaving the territorial waters of a Paris Convention country and entering the high seas – in that situation the courts of the relevant Paris Convention country would have jurisdiction.

In other more complex situations, it may be possible to seek a decision of the European Nuclear Energy Tribunal ("Tribunal")¹¹, in order to determine jurisdiction. Referral to Tribunal can be done by any Paris Convention country and this might be necessary, for example, where an incident occurred in the territory of more than one Paris Convention country.

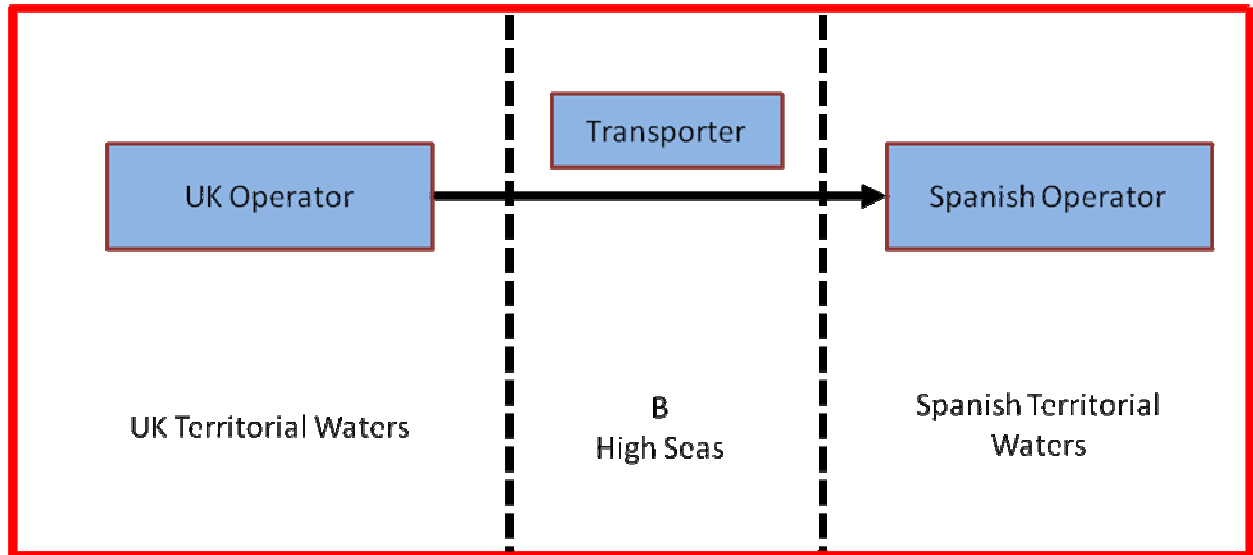
The provisions of Arts 13(a)/(b) are implemented in the United Kingdom through section 17 of NIA, although, rather than implementing equivalent provisions, section 17 simply gives the Secretary of State (néé Minister) to determine questions of jurisdiction in accordance with the provisions of the Paris Convention.

¹¹ Tribunal established by the Convention of 20th December 1957 on the Establishment of a Security Control in the Field of Nuclear Energy; <http://www.oecd-nea.org/law/european-nuclear-tribunal.html>

TRANSPORT OF A SINGLE CONSIGNMENT – UK TO SPAIN

To illustrate the principles just discussed, it may be useful to apply some hypothetical examples of transportations of nuclear material, including an example of a shared transport.

The following diagram shows the legal framework in respect of a transport from the United Kingdom to Spain of a single consignment of nuclear material:



Paris Convention

Figure 1. Transport of a Single Consignment – UK to Spain

This transport is from a Paris Convention country (UK) to another Paris Convention country (Spain) therefore the Paris Convention will apply to this example.

Arts 4(a) and 4(b) of the Paris Convention operate to provide that the UK operator will be liable for the material until the point of transfer of nuclear liability it has agreed with the Spanish operator. The standard position for transports between two Paris Convention countries is that nuclear liability for the material will pass to the receiving operator (in this instance the Spanish operator) when the nuclear material enters the nuclear installation of the Spanish operator unless a written agreement between the parties dictates otherwise. The two operators here are at liberty to agree the point of transfer at any point between the nuclear material leaving the nuclear installation of the UK operator and entering the nuclear installation of the Spanish operator.

Whichever operator agrees to be liable for nuclear liability for the material during the transport it should seek to protect itself from claims arising out of a nuclear incident occurring during the transport. Both operators in accordance with Art 10 of the Paris Convention will have suitable insurance or other financial security to cover their operator liability, but this may not always cover claims received from any Non-Paris Convention territories. Therefore the operator concerned should consider whether an indemnity or other form of assurance from its customer is required in order to protect itself and cover all potential claims. A common position is to rely on the Paris Convention insurance for Paris Convention claims and an indemnity from a customer for protection from claims from Non-Paris Convention territories.

The Transporter should also seek to protect itself from any claims arising out of any nuclear incident, by either being a named insured on one of the operator's insurance policies, or having a suitable nuclear liability insurance policy to cover all potential claims, or an indemnity or some other form of assurance from its customer.

JOINT TRANSPORTS

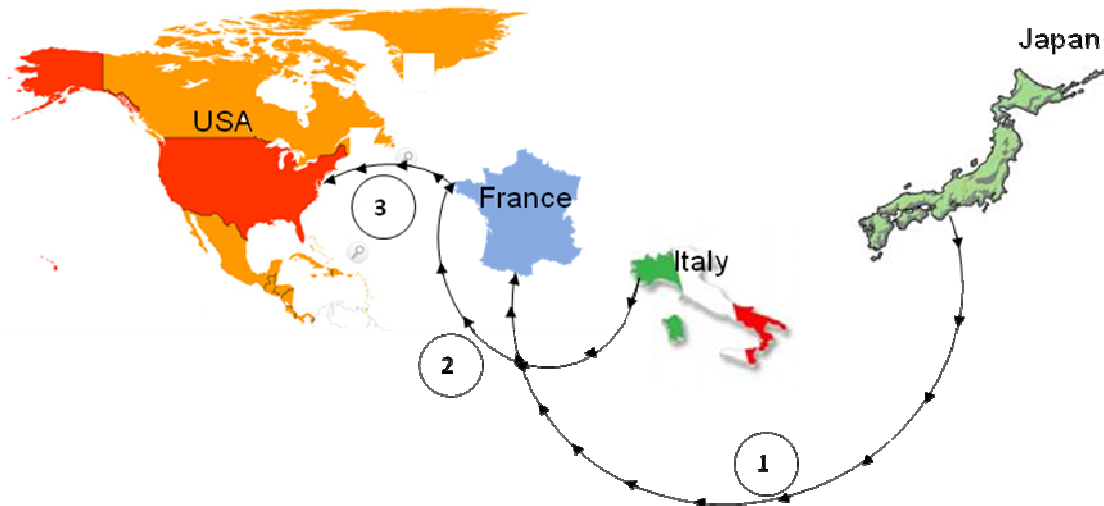


Figure 2. Joint Transport – Japan & Italy – France - USA

This is an example of a more complex series of transports. Nuclear material is being sent from Japan and Italy to the US. However, the material from Japan must first be taken to a nuclear installation in France (operated by a French operator) for processing.

We can break this down into three parts:

Part 1 – a transport of a single consignment from Japan to France where it will then be transported over land by the French operator to their nuclear licensed site to be processed.

Part 2- a transport of a single consignment from Italy to France where the consignment will not be unloaded from the ship at the French port.

Part 3- a shared transport of the material from Italy and the processed material from France, from the French port to the USA.

PART 1 – TRANSPORT OF SINGLE CONSIGNMENT FROM JAPAN TO FRANCE

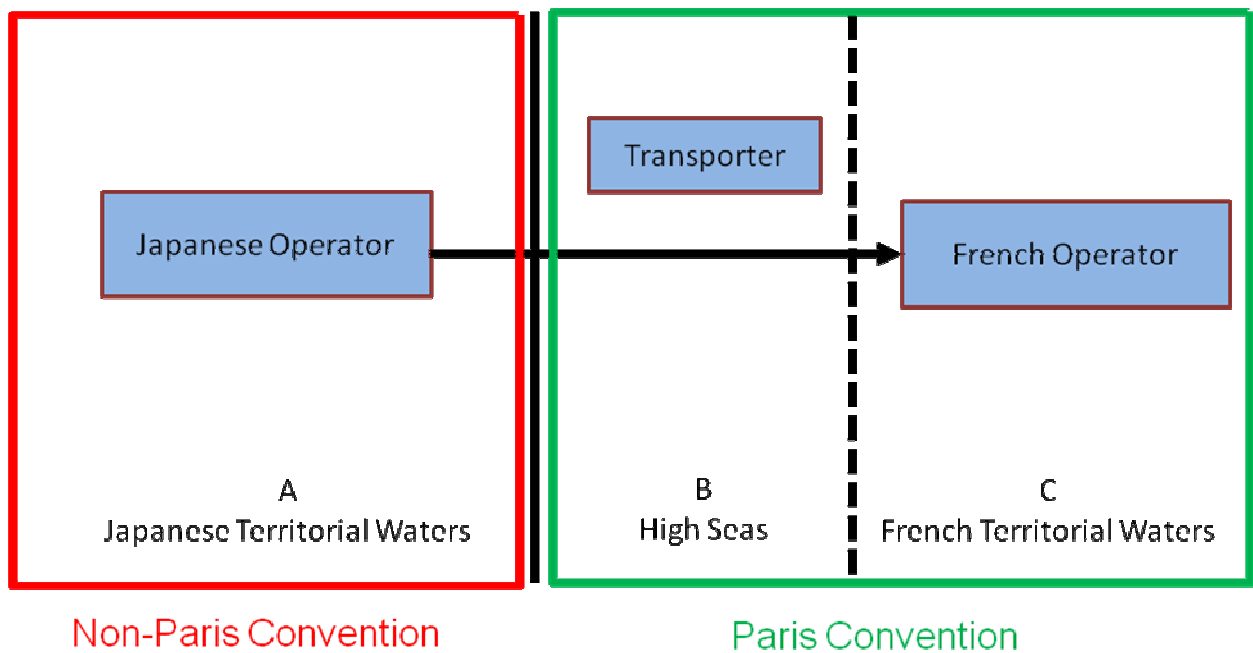


Figure 3. Transport of Single Consignment from Japan to France

Part 1 involves transporting nuclear material from a Non-Paris Convention country (Japan) to a Paris Convention country (France).

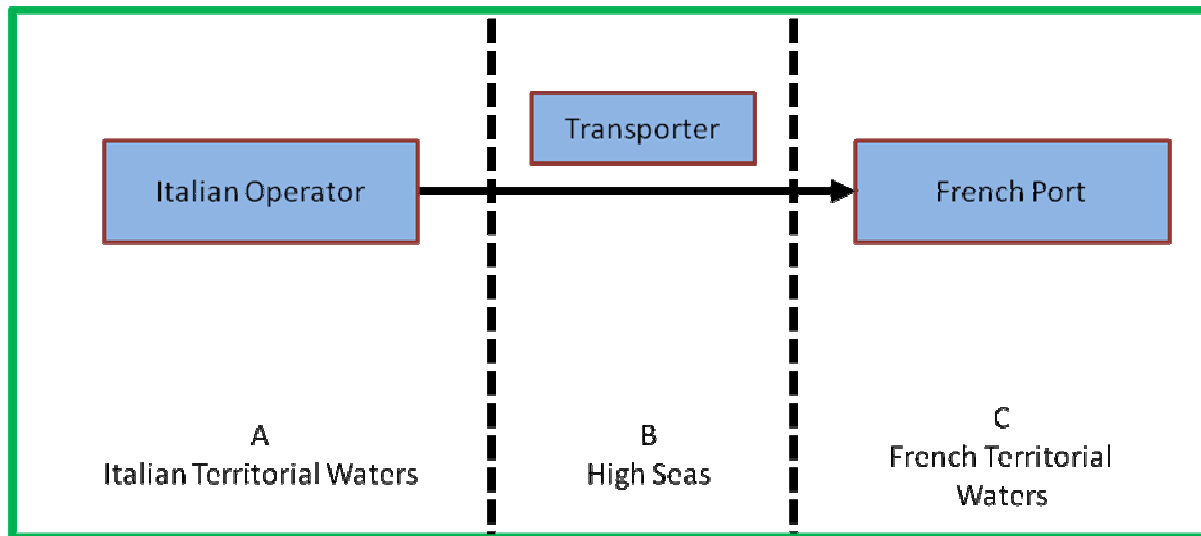
As the French operator is the operator of the installation to where the materials are being sent, then under Art 4(b) of the Paris Convention the French operator is liable for the material after the loading of material onto the ship in Japan. This is assuming, of course, that the material is being sent to France with the written consent of the French operator.

The Paris Convention does not apply in the territory of Non-Paris-Convention countries and therefore the French operator is only exposed to Paris Convention claims after the ship has left Japanese territorial waters. Consequently claims relating to any nuclear incident occurring before the ship has left Japanese territorial waters will be considered Non-Paris Convention claims.

The French operator should therefore look to protect itself from any claims arising out of a nuclear incident occurring during the transport. It will have suitable insurance or other financial security to cover its operator liability in accordance with the Paris Convention, but this may not always cover claims received from any Non-Paris Convention territories. Therefore it should consider whether an indemnity or other form of assurance from its customer is required in order to protect itself in respect of all claims, or just those from Non-Paris Convention territories.

The Transporter should also seek to protect itself from any claims arising out of any nuclear incident, by either being a named insured on one of the operator's insurance policies, or having a suitable nuclear liability insurance policy to cover all potential claims, or an indemnity or some other form of assurance from its customer.

PART 2 – TRANSPORT OF SINGLE CONSIGNMENT FROM ITALY TO FRANCE



Paris Convention

Figure 4. Transport of Single Consignment from Italy to France

Part 2 involves transporting nuclear material from a Paris Convention country (Italy) to another Paris Convention country (France).

As the nuclear material from Italy will not be unloaded from the ship at the French Port, the French operator will not assume liability for this material (assuming that there is no written agreement with the French operator to the contrary).

Therefore under Art 4(a) of the Paris Convention, the Italian operator will remain liable for the material until it is unloaded in the USA (a Non-Paris Convention country).

The Italian operator should therefore look to protect itself from any claims arising out of a nuclear incident occurring during the transport. Its Paris Convention insurance may not always cover claims received from any Non-Paris Convention territories, therefore it should consider whether an indemnity or other form of assurance from its customer is required in order to protect itself in respect of all claims or just those from Non-Paris Convention territories.

The Transporter should also seek to protect itself from any claims arising out of any nuclear incident, by either being a named insured on the Italian operator's insurance policy, or having a suitable nuclear liability insurance policy to cover all potential claims, or an indemnity or some other form of assurance from its customer if it isn't the Italian operator.

PART 3 – JOINT TRANSPORT FROM FRANCE TO USA

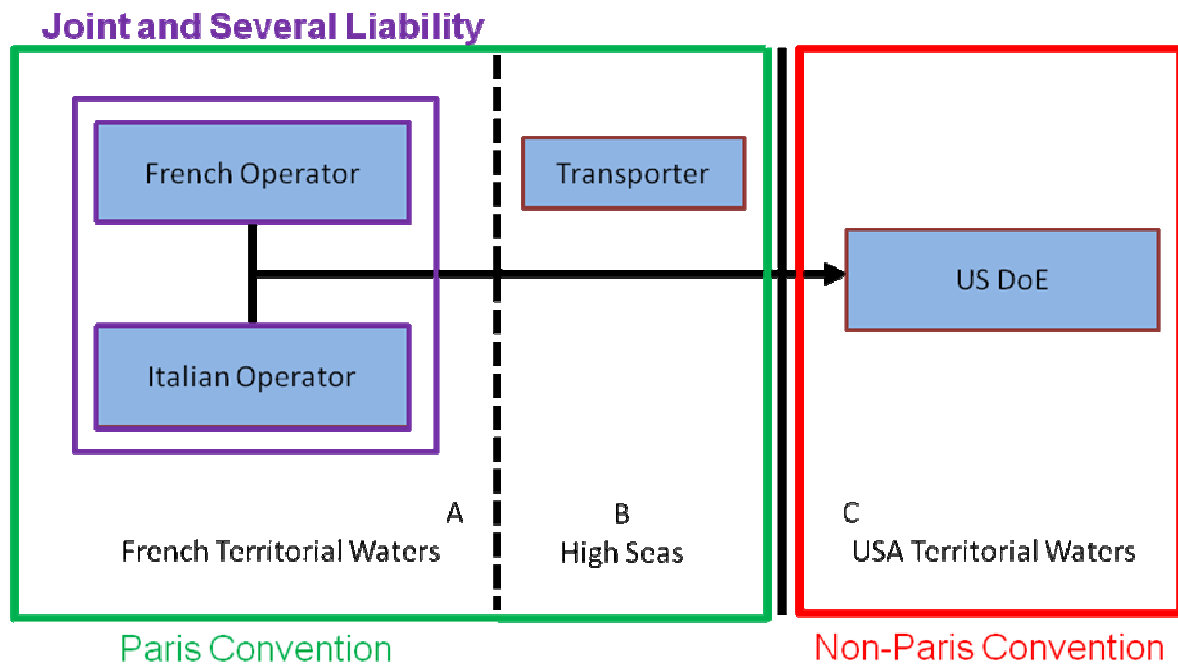


Figure 5. Joint Transport from France to USA

Part 3 involves transporting nuclear material from a Paris Convention country (France) to a Non-Paris Convention country (USA).

Once the material from France is loaded onto the ship, the transporter is carrying onboard two separate and distinct consignments from two separate operators.

Each operator is responsible for their material until it is unloaded in the USA (a Non-Paris Convention country) (Art 4(a)).

Under Article 5(d), as more than one operator is liable, liability is joint and several and the aggregate liability limit of the operators will be the higher of the 2 operator liability limits.

The current maximum French operator liability limit for transport of nuclear material is 22.9M Euros. The current Italian operator liability limit is 16.3M Euros. Therefore the aggregate liability limit of both operators will be 22.9M Euros and as under Art 5(d) no operator shall be required to pay more than its operator liability limit, the Italian operator's limit will be 16.3M Euros.

This may make the French operator a more appealing party against which to make a claim as it has a higher limit of liability. Consequently, where the Italian operator's material causes a nuclear incident but that fact is unknown, it is possible for the French operator, whose material did not cause the incident, to receive a higher proportion of claims than the Italian operator for an incident caused by the Italian operator's nuclear material.

This for me weakens the concept of 'joint and several' liability for joint shipments. With larger differences in operator limits this issue becomes very important, for example the UK operator limit is £140million and a Belgian operator's limit would be EUR 297.4 million,

The French operator should therefore, seek an indemnity from its ultimate customer from all liability in the case of a nuclear incident where such incident cannot be proved to have been caused by its consignment of nuclear material on the basis that but for carrying out this joint shipment the French operator might not have potentially assumed joint liability under the Paris Convention for the Italian operator's nuclear material.

The Transporter should also seek to protect itself from any claims arising out of any nuclear incident, by either being a named insured on one of the operator's insurance policies, or having a suitable nuclear liability insurance policy to cover all potential claims, or an indemnity or some other form of assurance from its ultimate customer.

CONCLUSIONS

It will be apparent from the above that the applicable legislation is complex and while theoretically relevant nuclear liability legislation seems clear on responsibility for a nuclear incident, in practical situations in the case of joint shipments at least the situation is far from clear. While the nuclear legislation may state that operators shall be joint and severally liable, they cannot truly be so due to issues such as:

- A gap in strength of covenant offered by operators
- Forum shopping – operator with higher limit is a more attractive target for third party claims

As a consequence insurers/guarantors can be exposed to an increased likelihood of claims than in the case of single shipments. For such reasons, in our experience, it is always helpful to discuss and agree with all parties in advance of any transport where the potential liabilities should lie, and then for the parties involved to ensure that such liabilities are addressed by either an indemnity from a customer taking into account any indemnity from the co-consigning operator or some form of single or joint insurance taking into account any specific limits of liability or geographical scope.

We believe it's vital to know and understand the legal risks involved in any shipment through detailed prior discussion. In the interest of sharing and promoting best practice throughout the Nuclear Transport industry, International Nuclear Services Limited would be delighted to assist in any such discussion that you may be involved in at this moment in time, or at any time in the future.