

Revised Paris and Vienna Nuclear Liability Conventions – Challenges for Nuclear Insurers

by Mark Tetley*

Abstract

The revisions recently implemented to both the Vienna and Paris nuclear liability conventions are intended to widen significantly the amount and scope of compensation payable in the event of a nuclear accident. Whilst this is a laudable objective, the final extent of the revisions leaves nuclear site operators and their insurers with greater uncertainty as a result of the wider and unquantifiable nature of some aspects of the revised nuclear damage definition, in particular where reference is made to environmental reinstatement and extended prescription periods.

Incorporating broader definitions in the convention revisions will therefore leave gaps in the insurance cover where insurers are unable to insure the new, wider scope of cover. If no insurance is available, then the liability for the revised scope of cover must fall upon either the operator or the national government.

This paper gives an overview of where and why the major gaps in nuclear liability insurance cover will occur in the revised conventions; it also examines the problems in defining the revised scope of cover and looks at where these unquantifiable risks should now reside, to ensure there is equity between the liabilities imposed on the nuclear industry and those imposed on other industrial sectors.

Introduction

The foundation for almost every nuclear liability regime in the world today has been provided by two international conventions – the OECD’s Paris Convention of 1960 and the UN’s Vienna Convention of 1963. The contents of these conventions were drawn from various national laws that had been drafted to accommodate the rise of the civil nuclear industry in the 1950s and the special risks this new industrial sector brought with it. In return for an onerous obligation of absolute and strict liability, nuclear site operators received a temporal and financial limit to their liability that enabled them to approach the conventional private insurance market to transfer the risks inherent in the total but limited liability obligation placed upon them. Whilst there are subtle national variations in emphasis and detail, in broad terms the concept that operators have a absolute liability that is restricted

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in most dimensions has permitted the involvement of private capital in the development of the civil nuclear industry and has allowed us today to benefit from the situation where nearly one-fifth of all electricity in the world is nuclear generated.

The nuclear industry is not alone in having obligations placed upon it; most industries that have the potential to cause substantial off-site human injury or physical damage are obliged to provide some form of liability cover to assist with the compensation of any victims following an accident. However, as we find ourselves at the beginning of the 21st century, society in general is more demanding and aware of what “rights” people feel they should have and those rights relating to the environment have become a high priority. As a consequence, large industrial operations have become objects of suspicion and, in some cases, vitriol; this changing public perception has inevitably passed through the democratic institutions to influence lawmaking and now the majority of developed world industrial liability legislation is leaning towards a much more onerous “polluter pays” principle. Whilst the general principle is a laudable one, some aspects of newer or proposed legislation is ahead of appropriate market mechanisms to deal with the liability and industries are finding themselves shouldered with untransferable liabilities that could burden their balance sheets and hamper innovation and development. It must be hoped that market mechanisms can develop over time, but at present the insurance industry is struggling the world over to provide for the new risks presented by unquantifiable environmental liabilities due to be imposed upon a multitude of industrial sectors.

This, then, is the context in which the nuclear liability conventions were recently revised. Perhaps it was to be expected for an industry that suffers such a poor perception and apparently unshakeable link to weapons and dangerous “waste”, but the revised conventions significantly broaden nuclear operators’ already onerous responsibilities and will stretch the insurance markets to provide the risk transfer hitherto enjoyed. The imposition of greater liability comes at a time when the nuclear industry’s improving safety record and innovative new designs make the risk of a major accident with off-site implications ever smaller. Nevertheless, some aspects of the revisions made are sensible and take account of developments such as inflation and a greater awareness of what action might be required following a major nuclear accident – experience gained as a result of the Chernobyl accident, whose 20th anniversary we have just “celebrated”.

The Nuclear Liability Convention Amendments

The changes made to the Paris Convention in 2004 largely mirror those made in 1997 to the UN’s Vienna Convention and for the purposes of this paper the major changes affecting both will be covered; the changes are neatly encapsulated by the OECD’s 2004 publicity that hailed the revisions as offering “more financial compensation, to more people, for a wider range of nuclear damages”. In brief the changes are as follows:

Increased amounts of financial obligation required

The 1997 amendment to the Vienna Convention raised the operator’s financial obligation from 5 million US dollars (USD) to 300 million Special Drawing Rights (SDR), whilst the 2004 Paris Convention revision raised its obligation from SDR 15 million to EUR 700 million. The Brussels Supplementary regime adds a further EUR 800 million on top of the Paris/Vienna regimes, thereby taking the maximum financial compensation available up to EUR 1 500 million (in the case of the combined Paris/Brussels arrangements). The part that is of interest to the insurance market is that first layer of cover – the EUR 700 million for Paris and SDR 300 million for Vienna, as this is what is

normally subject to insurance. The change, in the case of the Paris revision, is a 38-fold increase in the operator's obligation – probably justified but substantial nonetheless.

Increased temporal obligations

Both conventions have increased the temporal obligations of the operator (the caducity period) – the situation prior to revision was that no claims could be brought against the operator for nuclear damage once ten years had elapsed from the date of any nuclear incident; this applied equally to both bodily injury/death and other types of physical damage. The situation is now that both conventions permit claims to be brought against the operator for up to 30 years after the incident for bodily injury or death, although the ten-year period remains for other types of nuclear damage. The convention offered the flexibility for governments to extend this period of caducity if they desired and indeed some governments took this opportunity; however, notwithstanding this the private insurance market has not extended its period of indemnification beyond ten years. The amount of time available to make a claim once nuclear damage becomes known or is discovered (the prescription period) is now three years for both regimes – this represents no change for the Vienna Convention but an extension of one year for the Paris Convention.

Increased scope of liability

The most fundamental changes to the conventions are those relating to the scope of liabilities for compensation. The concept of nuclear damage was common to both conventions as the triggering cause for compensation; the difference between the two regimes was that Vienna defined nuclear damage whereas Paris did not. Defined or not, nuclear damage under the old arrangements was largely limited to damage to or loss of life of any person and damage to or loss of any property. There was some flexibility in the interpretation of the concept, particularly in the case of the undefined Paris Convention and, for example, with the UK's precedent based legal system, some direct economic damage was considered to constitute nuclear property damage. But in broad terms, the compensation offered was quite narrowly defined.

The revisions to both the Paris and Vienna Conventions now widen the scope of nuclear damage from the original, basic loss of life or injury, damage to property to add the following:

- economic loss arising from loss or damage;
- the costs of measures of reinstatement of impaired environment (unless such impairment is insignificant);
- loss of income deriving from an economic interest in any use or enjoyment of the environment, incurred as a result of a significant impairment of that environment;
- the costs of preventive measures, and further loss or damage caused by such measures; any other economic loss, other than any caused by the impairment of the environment.

It is immediately obvious that any nuclear plant operator with a site in a country that adheres to either of the two convention regimes now will have a much wider range of nuclear damage obligations than before, some of which will perhaps take many years to decide whether they are valid or not in a court of law. In discussions, the convention drafters and commentators of course expressed the intent that the new scope of cover is not intended to be too broad, but the worrying lack of defined liability

obligations leaves a large degree of uncertainty for both victim and operator. This can not be satisfactory when measured against the original convention objectives and the revisions may also mark a step away from the objective of legal harmonisation among both sets of convention states.

Changes to the geographical & jurisdiction arrangements

Further amendments have widened the geographical scope of the conventions, which are sensible as various anomalies existed under the old arrangements. In particular, the conventions restricted compensation to the signatory states, which clearly was somewhat of an injustice to those affected by the same nuclear damage but who resided in a non-signatory state! Jurisdiction can now extend under the new arrangements to include courts of a primarily affected state (this would presumably be in the event of a transport accident) instead of the contracting party. However, in the majority of cases, jurisdiction remains with the contracting party where the site causing damage is located.

This, then, is a brief overview of the material changes to both conventions. Before moving onto analysing these amendments in the context of insurance, it is necessary to understand a few basic concepts of insurance.

Basic concepts of insurance

Most forms of insurance are based on a few simple principles:

Insurable interest

The legal doctrine of *insurable interest* requires that the person to be covered by insurance should have a current financial interest, recognised in law, in the thing or event to be insured.

Premium analysis and loss expectation

The financial consideration (or premium) paid to the insurer in return for the transfer of risk is the result of extensive analysis and often significant actuarial work. Previous and expected loss events, theoretical and actual risk assessments and prevailing market expectations of capital return and use are all aspects used to set premiums. However, underwriters therefore can only predict losses that are foreseeable because science or technology has recognised a causal link between the risk and the harm.

To predict claims from a harm that is not known to science or technology at the time the policy is issued is impossible; premiums cannot, therefore, be calculated with the same degree of reliability and it will introduce the potential for more volatility within a portfolio and this will greatly affect the appetite of an insurer for developing products for such events.

Certainty of exposure

In addition to the analysis required to calculate a premium, insurers also need to assess the amount of capital to commit to the risk being transferred and how much is likely to be exposed to loss; this may not just be the consequences of a single loss, it may also be an accumulation of losses

through the aggregation of multiple policies arising from the same consequence. Some certainty of exposure is therefore important for an insurer.

Fortuity

Any insured event must be fortuitous and it must not be immediately predictable. Insurance only provides protection in circumstances where the loss is accidental; policies do not cover the consequences of the normal operations of a business, especially when the loss arises from an activity it has been specifically authorised to undertake. Such losses would be considered to be inevitable and beyond the scope of insurance.

Proximate cause of any loss

Insurers need to be able to establish a clear link of causation between the insured damage suffered and the identified incident. For example, in the case of cancer, where approximately one third of mankind are likely to contract cancer at some stage in their lives as the result of a multitude of causes (many of which remain unknown), it is difficult to separate out the individual cause of the disease as being the one liable for recovery under insurance. Therefore, to link directly and successfully cancer to a specific event is by no means certain; what is certain is that to do will incur substantial legal costs and would take some time. From both the victim and insurer's perspective, this is an unsatisfactory arrangement; for the insurer such lack of certainty makes setting a premium impossible, particularly when a substantial temporal delay in claiming is a possibility.

Anything is insurable

Finally, it is important to dispel one of the great myths of insurance; there is a widespread belief that anything is insurable. This is not the case and never has been and as noted above, there are a number of prerequisites for insurability that determine the willingness of insurers to offer cover. In simple terms, general insurance exists to protect people and businesses against the consequences of an accident. It may be a theft of stock, a road accident or injury suffered by a visitor to the premises. However, all policies contain some exclusions and many liabilities faced by a business are not insured; these must be accepted as the risks inherent in running a business. The list is very long indeed but includes:

- many contractual obligations;
- customer rejection of products;
- certain types of environmental pollution;
- deliberate non compliance with laws or regulations;
- the inevitable consequences of deliberate or reckless behaviour;
- acts of war.

Therefore, insurance is not a substitute for risk management, it complements it. Businesses that show a disregard for the property of others, the environment or the welfare of employees or neighbours cannot pass the responsibility to an insurer.

To summarise insurers require certainty of exposure and financial interest, fortuity of the insured event, clearly defined indemnity and an immediate and proximate link between any loss event and the insurance. All types of liability insurance provide more of a challenge to insurers, as some of these basic requirements are sometimes compromised and the more this is the case, the more difficult it is for insurers to price and accept the risk.

The Convention Amendments in the context of insurance

Before investigating the specific challenges presented by the revised conventions, some further comments on the general state of the current insurance market are useful. It is important to remember that insurance is possible thanks to the provision of private (as opposed to state) capital and as such it is exposed to the prevailing business climate; the insurance market is one of the more pure supply and demand driven markets operating today, with considerable freedom for businesses to access and leave the insurance sector. Therefore, our stakeholders are highly critical of the sector performance and capital will quickly leave if conditions or returns do not meet expectations. In this context, the following factors are important when considering the ability of insurers to provide nuclear operators with insurance for their obligations.

Availability of capital

The economic climate affecting the insurance and reinsurance industry has changed significantly in the last few years. The traditional image that insurers and reinsurers have a limitless supply of capital is very wide of the mark.

All liability insurers require the support of capital providers to operate. Due to a combination of factors (the World Trade Centre attacks, asbestosis, the fall in equity markets and the 2005 season of severe hurricanes in North America), a substantial amount of capital has left the industry. Capital is now a scarcer commodity and insurers are becoming increasingly careful of how it is allocated to their various lines of business.

At the same time, shareholders are now becoming much more cautious about how the capital they provide will be utilised; shareholders are increasingly concerned about the implications of insurers underwriting what is often referred to as “long-tail” business, a term that includes liability insurance. This concern has been exacerbated by the massive damage inflicted in many liability markets by asbestos and other long-term industrial diseases.

The consequence is that shareholders demand either:

- a better rate of return on their capital than in the past, driving up premium rates; or
- a desire to deploy their capital and “risk appetite” elsewhere, especially when considering what are perceived to be unattractive liability risks.

The issues surrounding capital are likely to be compounded further when the proposed EU solvency requirements are implemented – placing greater strain on the system as more capital is likely to be required to support many types of insurance. The impact on premiums, capacity and appetite for established product lines is difficult to predict, but is unlikely to encourage the development of new covers or increased capacity in perceived problem areas.

Regulatory requirements

In the past few years, there has been an increase in regulatory activity and control of the insurance industry to protect the interest of consumers. There has been a tightening of control and senior executives now have personal accountability for the corporate performance of the insurer they represent; corporate governance procedures will be substantially increased and insurers will need to be able to demonstrate to regulators that they have the highest standards of research and development and the underwriting competence, before offering products. This will mean that the historical practice of insurers responding to new opportunities will develop differently and only in circumstances where an insurer has absolute confidence in their ability to properly assess and quantify risk will insurance products be made available.

On the positive side, the effect will be that industry will be much better managed and be more financially secure. On the other hand, insurers are becoming much more selective in the markets in which they wish to operate, the customers to whom they wish to offer products and the products they make available. This is particularly relevant to the nuclear insurance sector, as the risk is often not well perceived by insurers and as a consequence insurers may avoid difficult risks.

Capacity

Even without the proposed changes to the nuclear liability conventions, a more selective insurance industry offering insurance products at economically viable prices could well result in fewer insurers providing capacity. Indeed, there may well not be a sufficient number of insurers to satisfy the overall demand; this could result in some businesses being unable to purchase the insurance through no fault of their own. Those able to do so could well find the cost of the insurance to be considerably more than have they historically become accustomed to.

Specific difficulties relating to Nuclear Insurance

The risk faced by nuclear insurers of both third party liability and physical damage is mostly of a catastrophic nature (i.e. any loss event is more likely to be financially expensive, but infrequent). The maximum loss expectancy is for a total nuclear plant loss requiring a full payment under the physical damage policy and widespread radioactive contamination causing many thousands or even hundreds of thousands of claims to be made against the operator for off site damage, leading almost certainly to exhaustion of the third party liability indemnity limit provided by insurers. It is to the remote possibility of this event that insurers commit their capital.

However, insuring the nuclear industry is very different to insuring other businesses; there are very few other single risks that could produce such a severe loss from a single site; perhaps some chemical or oil facilities are the only comparable risks in the world. Much more importantly, as has been previously described, insurance works on the basis of insurers assessing many of hundreds or thousands of risks and using the loss experience from a wide sample of risks to calculate with a realistic premium. The nuclear industry does **not** have a large number of risks, there are around 500 sites in the world and certainly not all of these are insured; the premium produced is therefore relatively low (between USD 400 and USD 600 million annually) so insurers have relatively little data on which to base premium and loss assessment. There is a substantial amount of theoretical loss data available from the nuclear industry, (for example some of the site probabilistic safety analysis studies) and this has proved to be very useful to insurers. However much of the modelling and premium assessment is done on an actuarial and theoretical basis rather than using real data. The inherent

uncertainty of this methodology makes many insurers even more reluctant to commit their capital to nuclear risks.

The above noted factors have set the scene for the operation of developed insurance markets in the early part of the 21st century; understanding the prevailing market conditions help when considering the difficulties presented to financial markets as a result of the material changes to the nuclear liability conventions. The revisions will now be analysed in some detail from the point of view of the insurance market.

Increased amounts of financial obligation required

It is the intention of insurers to provide the new, higher amounts of EUR 700 million/SDR 300 million, although this will be challenge as the new amount exceeds the maximum available capacity currently available; however, the lower risk site and transport amounts should be easier for insurers to provide for. The reason that insurers are hopeful that the limit can be ultimately provided is because limits in some countries are already quite high. The table below shows some examples:

Country	Currency	Liability limit	Currency units per USD	USD equivalent liability limit
Japan	JPY	60 000 000 000	116	517 241 379
Sweden	SDR	360 000 000	0.697	515 880 000
Switzerland	CHF	1 000 000 000	1.32	757 575 757
United States	USD	300 000 000	1	300 000 000

Although none is currently higher than the proposed new Paris Convention limit, the Swiss limit is already close to the revised liability limit and with efforts to secure further capacity, the revised limit probably can be achieved; however, achieving such a limit from the insurance market will be dependent on restricting the scope of cover.

Governments should be aware that more certainty of the bounds of exposure for insurers in all respects of the imposed liability will result in a higher amount of insurance being available. For example, if the full scope of the convention revisions was imposed upon operators, then little or no insurance will be available as some heads of nuclear damage are uninsurable; if the scope of cover is restricted as recommended in this submission then the minimum limit of compensation should be available.

Increased temporal obligations

Currently, the insurance market finds offering cover for more than ten years unacceptable, owing to a number of factors:

- The insurance market’s loss history from so called “long tail” liability insurance (i.e. where insurance exposure is not extinguished after a period of a few years) has been very poor and it continues to be a challenging environment. The woes of insurers worldwide who have suffered losses caused by asbestos have been well chronicled, and other similar lines of business are showing equally limited promise. Capital is therefore scarce for

liability business as shareholders become more reluctant to commit to risk that has a long term and uncertain exposure.

- The basic insurance principle of quantifying risk and exposure is also challenged the longer a policy is valid; second guessing future societal problems in an increasing litigious climate is something that more and more insurers and their shareholders are wary of. Ten years continues to represent the maximum time commitment most insurers are prepared to commit to.
- A further consideration for any claimant who intends to claim on an excessively “old” policy should be the security and solvency of the private sector insurer concerned; trying to make a claim after 15 or 20 years have elapsed is an expensive and not always successful exercise; there is a much greater guarantee of reliable payout from a policy with a caducity of ten years or less.

Today, few general non-life insurers are prepared to offer more than ten years for any policy; this limitation has been accepted by governments and policymakers globally for other lines of insurance. The situation for the provision of insurance for nuclear liability is no different than for general insurance, except that it probably suffers from a poorer perception. The maintenance of the current ten-year prescription will enable insurers to continue subscribing capacity towards the new limits.

Increased scope of liability

The revised conventions’ scope of cover continues to provide the already established protection based on civil law which has hitherto been insurable by the private market. However, the revised text also now adds significant public law protection, which is generally not insurable. Furthermore, both the revised conventions and the explanatory *exposé des motifs* of the Paris Convention are somewhat ambiguous; some of the decisions regarding heads of damage appear to be left to the discretion of the national competent court, while elsewhere such discretion seems to be disallowed. This ambiguity and combination of insurable and uninsurable damage could lead to confusion and therefore careful drafting of definitions and legislation will be required to ensure operators and insurers are able to quantify at what point liability attaches.

Each category of nuclear damage will be commented upon separately.

1. Loss of life or personal injury

This category of nuclear damage is unrevised; as such it presents no problem for insurers and therefore operator’s liability insurance for this coverage can continue.

2. Loss of or damage to property

This category of nuclear damage is also unrevised; as such it presents no problem for insurers and therefore operator’s liability insurance for this coverage will continue.

The extent of the remaining heads of nuclear damage described in the revised conventions is to be determined “by the law of the competent court”. In addition to the difficulties for insurers noted below within each individual head of damage, the possibility of any rogue decisions of the competent

court or other authority causes insurers considerable concern; insurers can not allow their capital to be exposed to the whim of an emotionally charged court deciding on what constitutes nuclear damage following a major nuclear event. In addition, the decisions reached by the relevant adjudicators must be seen to be equitable and well informed if the competent court is to retain its credibility with all interested parties.

3. *Economic loss arising from loss or damage referred to in sub-paragraph 1 or 2 above insofar as not included in those sub-paragraphs, if incurred by a person entitled to claim in respect of such loss or damage*

This category of nuclear damage, while not explicitly mentioned in the text of the 1960 Paris Convention, is assumed to be insured at present. The 1963 Vienna Convention always had a more broad definition of nuclear damage, so again under this regime, some aspects of economic loss could have been subject to compensation and insurance. The revised conventions themselves state the necessity of a clear economic interest in the property damaged before this head of cover can be triggered. However, it is essential that there is a clear, defined and direct link between the economic loss and the nuclear physical damage loss before compensation for this type of damage can be considered by insurers. Only when there is direct and quantifiable economic interest associated with the physical damage can insurers assess the risk of liability arising from this damage, thus any definition or clarification of this nature in the proposed legislation would be of benefit to operators, insurers and claimants alike; conversely any weakening of this link or ambiguity in definition could cause the withdrawal of insurance support for this cover.

4. *The costs of measures of reinstatement of impaired environment, unless such impairment is insignificant, if such measures are actually taken or to be taken*

This category of nuclear damage is not insurable at present; this is not a comment on the nuclear nature of the damage but a position adopted by the global insurance market. **Almost all forms of environmental liability are currently uninsurable**; these are the principle reasons why:

- Environmental liability does not pass the test of providing an “insurable interest”; any risk under consideration must be capable of financial quantification and evaluation. The Convention argues that, because remedying environmental damage has a cost, that this aspect of nuclear damage can be imposed upon the operator. This is not sufficient for insurers: the time taken to remedy environmental damage could be years or decades, the standard and quality of any remedy of damage would be the subject of lengthy and emotional debate providing a large range to the potential cost, the pre-existing standard of the damaged environment would also be open to debate and future regulatory requirements could dramatically alter the scope of the remedy and thus alter the cost; all these factors render environmental damage unquantifiable and thus uninsurable.
- There is no direct economic interest in the environment and, once again, it is impossible to provide an “insurable interest”.
- It is difficult to establish what environmental damage occurred at what stage, so making a polluter pay for his or her own pollution is not always possible; this discrepancy prevents the introduction of any insurance.
- Similarly, diminution of land and property value by environmental damage is difficult to pin down to a particular source, making insurance evaluation impossible.

- The use of the words “unless insignificant” as an attempt to restrict action under this damage is also open to confusion and debate; the word “insignificant” is not defined in the convention text and is thus open to national court decisions. This too adds a further element of uncertainty to this particular aspect of nuclear damage.

In simple terms, insurers need to be able to assess financially the probability and severity of any claim before reaching a premium – such analysis is not possible with environmental damage because of its unquantifiable nature. This reaction is consistent with insurance markets across all types of liability business in all countries. The EU Environmental Liability Directive contains similar provisions and several governments have already accepted the arguments against insuring environmental liability damage presented by the general market insurers and the European Insurers’ Committee.

In summary, the nuclear insurance market regards this aspect of nuclear damage uninsurable and therefore will be unwilling to provide any capital to support this type of risk.

5. *Loss of income deriving from a direct economic interest in any use or enjoyment of the environment, incurred as a result of a significant impairment of that environment*

This aspect of nuclear damage contains an insurable aspect but also an ambiguous and undefined concept that is therefore uninsurable.

The similarity between the economic interest in this head of damage and that contained in (3) above means that direct economic damage can be insured but with strict conditions as, under this type of nuclear damage, the connection between economic damage and property owned has been severed; instead in this case economic damage can be caused as result of damage to an environment whose use is of economic benefit to someone or even whose use is of **enjoyment** to someone. The insurable aspect of the damage under this type of damage can only be provided in the event of direct economic loss as a result of nuclear damage to a **direct and protected interest to the environment** and only for the value of the protected interest; all other damages under this head of cover fail as having insufficient and thus unquantifiable insurable interest.

6. *The costs of preventive measures, and further loss or damage caused by such measures*

This aspect of nuclear damage is only insurable insofar as it covers the direct economic costs of any preventive measures; therefore measures relating to evacuation and other immediately measurable costs following nuclear damage are insurable. However, any speculative preventative measures relating to the environment or indirect economic activity are uninsurable. Ensuring a clear definition of precisely what is and what is not insurable will be challenging, but it is anticipated that the majority of damage suffered by victims through evacuation and associated disruption following that evacuation as a result of nuclear damage will be insurable.

Other definitions

The remaining definitions relating to nuclear damage offered by the revised Paris Conventions do not offer insurers or operators much comfort; they are ambiguous and do not offer any measure of quantification that is of benefit to insurers. Instead measures are left to the whim of the courts and

government, both of whom will be open to emotional influences when deciding liability and any quantum associated.

In summary, the insurers' position with regard to the newly defined and broadened concept of nuclear damage is as follows:

Loss of life or personal injury	Insurable
Loss of or damage to property	Insurable
Economic loss arising from loss or damage	Insurable for direct and quantifiable damage
The costs of measures of reinstatement of impaired environment	Not insurable
Loss of income deriving from a direct economic interest in any use or enjoyment of the environment	Only insurable to the value of a direct and protected economic interest in the environment
The costs of preventative measures, and further loss or damage caused by such measures	Insurable only for the direct and quantifiable aspects of damage, as assessed and controlled by the relevant insurers

Changes to the geographical & jurisdiction arrangements

The limiting of jurisdiction to the state where the nuclear incident occurred is of some comfort to insurers and although there is a broadening under the revised conventions to include actions for damages brought in other countries, it is apparent that in most cases the ultimate jurisdiction rests with the "nuclear" state. However, the prospect of finding the competent court subject to a more hostile, potentially anti-nuclear environment following the trans-boundary spread of nuclear damage would alarm insurers and cause them to withdraw capacity for this type of insurance.

Therefore revisions to the conventions are of material interest to insurers as they open up a wider spectrum of nuclear damage and leave insurers with aspects of cover that can not be easily quantifiable. It is likely that insurers will not be able to provide insurance for many of the new heads of damage and this leads us to the question of how these obligations should be covered.

Who should provide compensation for the uninsurable aspects of the revisions?

There are likely to be several different solutions to provide for operators' obligations that are uninsurable. This is a further undesirable consequence of the revisions, given that one of the key objectives of the nuclear liability system was greater harmonisation. Some governments may accept the new heads of change automatically and for free; others may charge operators for taking on the liabilities, whilst others may simply leave the liabilities with the operators, and their balance sheets.

Personally I would favour the first option, as precedent has already been set for this in many countries with the uninsurable aspects of the existing conventions; the second option is difficult as striking a price for the transfer of risk will be difficult, especially as we insurers have admitted that these aspects of the conventions are currently unquantifiable. The third option does not seem fair to operators – the regime makes liability strict and absolute and it is not an equitable deal if operators then have to shoulder the burden of societal or emotion driven risks. What insurers would wish and

hope for is that governments are able to agree a **consistent** response, so that the hopes of the original drafters of the nuclear liability regimes come closer to being realised through greater harmonisation and therefore certainty for any nuclear accident victims.

Conclusion

Making an industrial “polluter” pay more money to more people is a fair objective for any government, but to impose such a regime on the nuclear industry without restricting the danger posed by these obligations threatens the delicate equilibrium that has allowed insurers to support the nuclear industry throughout its development.

The financial uncertainties introduced by the new heads of cover under the revised conventions will cause a reduction in insurance cover unless a consistent approach is found to deal with the unquantifiable risks imposed upon the nuclear operators. An inconsistent approach will lead to a fragmentation of the existing legal and insurance arrangements, which in turn will compromise the original convention drafters’ objectives of legal harmonisation and an equitable and certain route to compensation for nuclear accident victims.