

# LIABILITY AND COMPENSATION FOR NUCLEAR DAMAGE

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## WHY ARE NUCLEAR LIABILITY AND COMPENSATION REGIMES IMPORTANT?

Resistance to nuclear energy use is largely due to public fear of the potential damage that could result from an accident at a nuclear installation or during the transport of nuclear material.

## WHY ARE NUCLEAR LIABILITY AND COMPENSATION REGIMES IMPORTANT?

A nuclear accident can produce damage...

- ❑ to human health, property, the environment, the economy
- ❑ that does not stop at political or geographical borders
- ❑ of a magnitude/complexity that requires special liability rules

Governments have responded by...

- ❑ balancing public assurance of adequate compensation for damage with protecting investors/suppliers from ruinous liability claims
- ❑ adopting special legal regimes at national/international levels to reflect this balance

## NUCLEAR LIABILITY AND COMPENSATION REGIMES ADDRESS EXCEPTIONAL SITUATIONS...

Most national and international legal regimes address:

- liability and compensation for damage from a nuclear incident at a nuclear installation or during transport of nuclear substances
- exceptional risks arising from nuclear activities where common law rules and practice are not suitable (e.g. activities involving high levels of radioactivity, criticality risks, etc.)
- liability and compensation for damage suffered by third parties (including nuclear operator's employees)

## NUCLEAR LIABILITY AND COMPENSATION REGIMES ADDRESS EXCEPTIONAL SITUATIONS...

They do not normally address:

- damage that may be caused by radioactive sources outside a nuclear installation; not deemed to pose "exceptional" risks
- e.g. radioisotopes ready for use in industrial, commercial, agricultural, medical, scientific or educational applications or covered by special liability and compensation regimes

Liability for this type of damage is normally based on tort, product liability, contractual liability, criminal or other field of law at national level

## NUCLEAR LIABILITY/COMPENSATION REGIMES ADDRESS EXCEPTIONAL SITUATIONS...

For a compensation regime to apply, there must be a “nuclear incident”...

- any occurrence or succession of occurrences with the same origin which causes damage, as long as the occurrence, series of occurrences or the damage arises out of the radioactive properties, or a combination of radioactive properties with toxic, explosive or other hazardous properties of nuclear fuel or radioactive products or waste, or from ionizing radiation emitted by any source of radiation inside a nuclear installation...

## NUCLEAR LIABILITY/COMPENSATION REGIMES ADDRESS EXCEPTIONAL SITUATIONS...

### A "nuclear incident"...

- includes an ordinary, repetitive and even foreseeable event
- no need for event to be sudden, fortuitous or even significant

an emission of radiation which causes nuclear damage even if the emission occurs in the normal course of operations of a nuclear installation or in the normal course of transporting nuclear substances and even if the level of emissions is within limits prescribed by national law



## NUCLEAR LIABILITY/COMPENSATION REGIMES ADDRESS EXCEPTIONAL SITUATIONS...

The incident must occur in a “nuclear installation”...

- reactors, factories for manufacturing/processing nuclear substances, for separating isotopes of nuclear fuel, for reprocessing irradiated nuclear fuel; facilities for storing nuclear substances; other installations as may be determined...
  - x reactors comprised in a means of transport (submarines),
  - x research laboratories with small amounts of fissionable materials
- or involve “nuclear substances” coming from one...
- nuclear fuel (but not natural uranium nor depleted uranium)
  - radioactive products or waste



## NUCLEAR LIABILITY/COMPENSATION REGIMES ADDRESS EXCEPTIONAL SITUATIONS...

What happens if there's no "nuclear installation"?

- contamination of field crops through deliberate distribution of radioactive substances by a crop duster by unknown persons (with/without terrorist intentions)
- resulting contamination is such that maximum permitted levels for foodstuffs under national/international standards is exceeded

There is no "nuclear incident"

## NUCLEAR LIABILITY/COMPENSATION REGIMES ADDRESS EXCEPTIONAL SITUATIONS...

The incident must arise out of the radioactive properties of "nuclear fuel" ...

- fissionable material in the form of uranium metal, alloy, or chemical compound; plutonium metal, alloy or chemical compound; other fissionable material as may be determined

or of "radioactive products or waste"...

- any radioactive material produced in/made radioactive by exposure to the radiation incidental to the process of producing or utilising nuclear fuel (not including nuclear fuel)

## NUCLEAR LIABILITY/COMPENSATION REGIMES ADDRESS EXCEPTIONAL SITUATIONS...

There must be “damage”...

- no single, agreed upon definition
- must be related causally to a nuclear incident

## NUCLEAR LIABILITY/COMPENSATION REGIMES: BASIC PRINCIPLES

...a nuclear incident occurs, causing damage... what then?

- ❑ special legal regimes at national level (most nuclear countries)
  - ✓ strict liability of nuclear operator
  - ✓ exclusive liability of nuclear operator
  - ✓ liability limited in amount
  - ✓ compulsory financial security
  - ✓ liability limited in time
- ❑ special legal regimes at international level (many nuclear countries)
  - ✓ unity of jurisdiction
  - ✓ non-discrimination

Operator =  
licensee/other  
recognized entity

## NUCLEAR LIABILITY/COMPENSATION REGIMES: BASIC PRINCIPLES

### *Strict Liability*

- operator is liable without proof of fault or negligence; victims relieved of heavy "proof" burden

### *Exclusive Liability*

- all liability channeled to operator; victims need not pursue all others "at fault"

### *Liability Limited In Time*

- liability usually limited to 10 years from accident date; must file claims 2-3 years from "discovery" of damage + operator liable

### *Limited Liability Amount*

- operator's liability limited in amount; investor relief from ruinous liability claims

### *Compulsory Financial Security*

- ensures funds are available when needed; security must equal liability amount

## WHY DO WE NEED INTERNATIONAL REGIMES?

- ✓ maintain the "balance" where accidents cause trans-boundary damage
- ✓ establish rules for cross-border legal actions
- ✓ establish liability for damage occurring during inter-state transport
- ✓ determine which courts have jurisdiction to hear compensation claims
- ✓ determine which country's laws apply

### *UNITY OF JURISDICTION*

only the courts of the country where the accident took place are competent to hear compensation claims

### *NON-DISCRIMINATION*

there can be no discrimination on the basis of nationality, domicile or residence

## INTERNATIONAL REGIMES UNDER OECD AUSPICES

- 1960 Paris Convention on Nuclear Third Party Liability (1968)  
basic liability/compensation convention: 15 Parties (western Europe)
- 1963 Brussels Convention Supplementary to Paris Convention (1974)  
supplementary funding convention: 12 Parties (Paris States)
- 2004 Protocols amending Paris + Brussels Supplementary Conventions  
(not yet in force)  
major revision: more money for more victims for more damage;  
16 signatories (Paris States + Switzerland)




## INTERNATIONAL REGIMES UNDER IAEA AUSPICES

- 1963 Vienna Convention on Civil Liability for Nuclear Damage (1977)  
basic liability/compensation convention: 35 Parties  
(central/eastern Europe ++)
- 1997 Protocol amending 1963 Vienna Convention (2003)  
major revision: more money for more victims for more damage;  
5 Parties (2 with nuclear power generating capacity)
- 1997 Convention on Supplementary Compensation for Nuclear Damage  
(CSC) (not yet in force)  
global liability/compensation regime: 4 States (3 with nuclear  
power generating capacity, including the U.S.)

## THE LINK BETWEEN PARIS AND VIENNA CONVENTIONS

1988 Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention (1992)

25 Parties: 10 Paris States + 15 Vienna States

 ensures that only one of the two conventions will be exclusively applicable to a nuclear incident

 effective extension of geographical scope of both conventions (western/eastern Europe)

# NUCLEAR DAMAGE: WHAT'S COMPENSATED, WHAT'S NOT?

## Paris Convention; 1963 Vienna Convention

### WHAT'S COMPENSATED?

- 1) death, personal injury
  - 2) property loss or damage
- other damage if provided by the law of the country with jurisdiction  
*(1963 Vienna Convention only)*

### WHAT'S NOT?

- ✓ nuclear installation itself
- ✓ property used/to be used in connection with nuclear installation (e.g. suppliers' property)
- ✓ means of transport carrying nuclear substances *(1963 Vienna Convention but national law may provide otherwise)*

## 1986: "CHERNOBYL" CHANGED EVERYTHING

### WHAT'S WRONG WITH THE LIST YOU'VE JUST SEEN?

- ✓ damage to environment (water, air, soil, etc) not covered "per se"
- ✓ economic loss/costs not covered "per se" + no determination of what constitutes real "economic" loss
- ✓ *possible* compensation as "property damage" or "other loss/damage" but national law will decide
- ✓ national laws reflect varying legal systems; varying legal systems lead to legal uncertainty
- ✓ no one likes legal uncertainty – not investors, not suppliers, not operators, not bankers and definitely not lawyers!

## POST-CHERNOBYL: MORE DAMAGE TO BE COMPENSATED

2004 Paris Protocol; 1997 Vienna Convention; 1997 CSC

*What's new? ...to the extent determined by the law of the country with jurisdiction (accident country)...*

- ❖ economic loss arising from personal injury/death or property damage/loss if not already compensated
  - factory owner's loss of income due to production stoppage directly resulting from factory being damaged by nuclear incident
  
- ❖ costs of measures to reinstate significantly impaired environment, if not already compensated; aim to restore damaged environment components or introduce equivalents into environment
  - removal of contaminants from land so that it no longer poses any significant risk in terms of future use

## POST-CHERNOBYL: MORE DAMAGE TO BE COMPENSATED

2004 Paris Protocol; 1997 Vienna Convention; 1997 CSC

*What's new? ... to the extent determined by the law of the country with jurisdiction (accident country)...*

- ❖ loss of income from (direct) economic interest in use/enjoyment of environment due to significant impairment, if not already compensated;
  - economic loss suffered by fishermen who can no longer sell their product because the fish are contaminated by radiation resulting from a nuclear incident

“Rumor” damage is NOT compensated! Where fisherman cannot sell their product because buyers “fear” the fish are contaminated , although in fact they are not, no compensation is payable.



## POST-CHERNOBYL: MORE DAMAGE TO BE COMPENSATED

2004 Paris Protocol; 1997 Vienna Convention; 1997 CSC

*What's new? ... to the extent determined by the law of the country with jurisdiction (accident country)...*

- ❖ costs of preventive measures + further loss/damage caused thereby; taken after incident to prevent/minimize nuclear damage
  - production and distribution of iodine pills; evacuation of a city, region etc.
- ❖ other economic loss not caused by impairment of the environment if permitted by the law of the country with jurisdiction (*1997 Vienna Convention, CSC*); loss not related to personal injury or property damage
  - losses suffered by the employees of the damaged factory who were laid off



## POST-CHERNOBYL: DAMAGE NOT COVERED

2004 Paris Protocol; 1997 Vienna Convention; CSC

- ✓ damage to the nuclear installation itself
- ✓ damage to any other installation on the same site (including one under construction or in the course of being decommissioned)
- ✓ damage to property on the installation site used/to be used in connection with installation (e.g. suppliers' property)
- ✓ damage to the means of transport on which nuclear substances were carried (*optional inclusion under CSC only*)

## PRESCRIPTION PERIODS FOR INSTITUTING COMPENSATION CLAIMS

### THE PROBLEM

- Victims** —→ bodily injuries (e.g. cancers) may not manifest themselves until many years after an accident; victims face proof challenges that delayed injuries caused by accident; victims should not be deprived of compensation simply because their injuries were “late”
- Operators** —→ no wish to maintain over long periods of time reserves against potentially large but unascertainable amounts of liability; “proof” challenge is why financial security providers (mainly insurers) will not cover more than 10 year period

## PRESCRIPTION PERIODS FOR INSTITUTING COMPENSATION CLAIMS

### THE SOLUTION

#### Paris Convention; 1963 Vienna Convention; CSC Annex

- claims to be made within 10 years of accident
- "longer" periods if covered by financial security
- earlier claims not affected by "longer" period claims

#### 2004 Paris Protocol, 1997 Vienna Convention

- claims for personal injury/death to be made within 30 years of accident ; all other claims within 10 years of accident
- "longer" periods if covered by financial security
- earlier claims made not affected by "longer" period claims

## NATURE, FORM AND EXTENT OF COMPENSATION

- nature, form, extent and equitable distribution of compensation are determined by the law of the country with jurisdiction (accident country)
- courts decide:
  - extent to which damage is compensated
  - how compensation will be paid (e.g. lump sum or annuity)
  - if measures for equitable distribution should be taken in advance (e.g. limit compensation on "per person" or "per category" basis)
  - how to implement priority for personal injury/death claims *(1997 Vienna Convention )*

# LIABILITY AMOUNTS

## Paris Convention; 2004 Paris Protocol

### Paris Convention

- ❑ minimum liability: 5 million SDR
- ❑ maximum liability: 15 million SDR
- ❑ NEA Steering Committee recommendation : 150 million SDR

### 2004 Paris Protocol

- ❑ minimum liability: 700 million EUR
- ❑ maximum liability: none
- ❑ minimum reduced liability for low-risk installations/transport\*: 70/80 million EUR

State guarantee up to 700 million EUR

14/10/2008: 1 Special Drawing Right (SDR )= 1.11 € / US\$ 1.53

## LIABILITY AMOUNTS

### 1963 Vienna Convention; 1997 Vienna Convention

#### 1963 Vienna Convention

- ❑ minimum: US\$ 5 million (\$U.S. gold value 29/04/1963)  
US\$ 95 million (current approx. value)
- ❑ maximum: none

#### 1997 Vienna Convention

- |                               |                 |
|-------------------------------|-----------------|
| ❑ minimum liability:          | 300 million SDR |
| ❑ maximum liability:          | none            |
| ❑ minimum reduced liability*: | 5 million SDR   |

\* State guarantee up to 300 million SDR

14/10/2008: 1 Special Drawing Right (SDR )= 1.11 € / US\$ 1.53

## COMPENSATION AMOUNTS

Brussels Supplementary Convention; 2004 BSC Protocol; 1997 CSC

Brussels Supplementary Convention: 300 million SDR

2004 BSC Protocol: 1.5 billion EUR

Convention on Supplementary Compensation: 1<sup>st</sup> tier: 300 M SDRs  
(anticipated) 2<sup>nd</sup> tier: 300 M SDRs

14/10/2008: 1 Special Drawing Right (SDR) = 1.11 € / US\$ 1.53



## HOW MUCH MONEY IS/WILL BE AVAILABLE?

### PARIS CONVENTION

Liability: 5 million/150 million SDR

### BRUSSELS SUPPLEMENTARY CONVENTION

Compensation: 300 million SDR

### 1963 VIENNA CONVENTION

Liability: 5 million USD

### 1997 VIENNA CONVENTION

Liability: 300 million SDR

### 2004 PARIS PROTOCOL

Liability: 700 million EUR

### 2004 BSC PROTOCOL

Compensation: 1.5 billion EUR

### SUPP. COMPENSATION CONVENTION

Compensation: 600 million SDR

1 SDR = 1.53 USD

1 SDR = 1.11 EUR

# NUCLEAR POWER GENERATING STATES PARTY TO AN INTERNATIONAL CONVENTION

- ❖ Paris Convention (PC)
- ❖ Brussels Supplementary Convention (BSC)
- ❖ 1963 Vienna Convention (VC)
- ❖ 1988 Joint Protocol (JP)
- ❖ 1997 Vienna Convention (RVC)
- ❖ Convention on Supplementary Compensation for Nuclear Damage (CSC)

ARGENTINA	VC ; RVC ; CSC	LITHUANIA	VC; JP
ARMENIA	VC	MEXICO	VC
BELGIUM	PC ; BSC	NETHERLANDS	PC ; BSC; JP
BRAZIL	VC	PAKISTAN	
BULGARIA	VC	ROMANIA	VC ; JP; RVC ; CSC
CANADA		RUSSIA	VC
CHINA		SLOVAK REP.	VC; JP
CZECH REP.	VC ; JP	SLOVENIA	PC ; BSC; JP
FINLAND	PC ; BSC; JP	SOUTH AFRICA	
FRANCE	PC ; BSC	SPAIN	PC ; BSC
GERMANY	PC ; BSC; JP	SWEDEN	PC ; BSC; JP
HUNGARY	VC; JP	SWITZERLAND	
INDIA		TAIWAN	
ISL. REP. OF IRAN		UKRAINE	VC; JP
JAPAN		UNITED KINGDOM	PC ; BSC
KOREA		UNITED STATES	CSC

## NUCLEAR POWER PLANTS WORLD-WIDE

### 439 Operating; 37 Under Construction (UC)

ARGENTINA	2 + 1 UC	LITHUANIA	1
ARMENIA	1	MEXICO	2
BELGIUM	7	NETHERLANDS	1
BRAZIL	2	PAKISTAN	2 + 1 UC
BULGARIA	2 + 2 UC	ROMANIA	2
CANADA	18	RUSSIA	31 + 7 UC
CHINA	11 + 6 UC	SLOVAK REP.	5
CZECH REP.	6	SLOVENIA	1
FINLAND	4 + 1 UC	SOUTH AFRICA	2
FRANCE	59 + 1 UC	SPAIN	8
GERMANY	17	SWEDEN	10
HUNGARY	4	SWITZERLAND	5
INDIA	17 + 6 UC	TAIWAN	6 + 2 UC
ISL. REP. OF IRAN	1 UC	UKRAINE	15 + 2 UC
JAPAN	55 + 2 UC	UNITED KINGDOM *	19
KOREA	20 + 4 UC	UNITED STATES	104 + 1 UC

## MORE INFORMATION?

OECD/NEA WEBSITE: [www.nea.fr](http://www.nea.fr)  
IAEA WEBSITE: [www.iaea.org](http://www.iaea.org)

Many thanks for your attention