

INSURANCE ISSUES IN TRANSPORT

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Cologne, 11th January 2024



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01

What is a Nuclear Insurance Pool

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01 Nuclear Insurance Pool (1/2)

Nuclear Insurance Pools have been established by the insurance markets of the world during 1950's due to pressure from Governments and the Nuclear industry

- A Pool underwrite a particular risk or class of business. It is a very specific kind of business
- Commonly employed where the risks in question are:
 - few in number not a big quantity like normal commercial business
 - require a capacity beyond the individual means of the members (underwriting guidelines exclusion of nuclear, trust)
 - presents some particularly hazardous aspect which would render acceptance by conventional methods it is difficult if not impossible
- World wide Inter-Pool Reinsurance
 - Reciprocal arrangements between Pools to assure best and high capacity
 - Standard Rules between the Pools to guaranty common guidelines
- Why is insuring nuclear different
 - Catastrophe radioactive contamination of a widespread aerea
 - Extensive plant damage
 - Low loss frequency with high loss amounts

✓ 01 Nuclear Insurance Pool (2/2)

- Pools are market wide
 - Spread of risks
 - Participation by insurers, otherwise not able to write nuclear insurance
 - This leads to capacity enhancement Erweiterung at its best
 - Human sources and interaction leads to transfer of know-how and experience (U/W, engineers, client contact)
 - Maximum security to insureds and victims through controlled membership
- Acceptances for Pool Members
 - The concentration of nuclear risks (Nuclear installations and transports)
 - Transparency
 - Highest possible commitment to nuclear u/w
- Reinsurance between Pools:
 - World wide spread of risks
 - Rapid and easy exchange of information
 - Claims handling co-operation in general but also when we have country overlapping losses.
And there is not only a co-operation between the Pools but also between Pools and Mutuals. We have the same clients. Exchange of experience

02

Function of a Pool

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✓ 01. Foundation of dkgv / key companies

- dkgv was founded in May 1957 and is reinsuring nuclear risks for nearly 66 years
- As of 1.1.2022, dkgv has 25 member shareholders
- Key members are:



Standard & Poor's Rating: AA



Standard & Poor's Rating: AA-



Standard & Poor's Rating: AA-



AXA Insurance
Reinsurance

Standard & Poor's Rating: AA-



Standard & Poor's Rating: AA+



Rating: backed by public funds



Standard & Poor's Rating: A+



Standard & Poor's Rating: A+



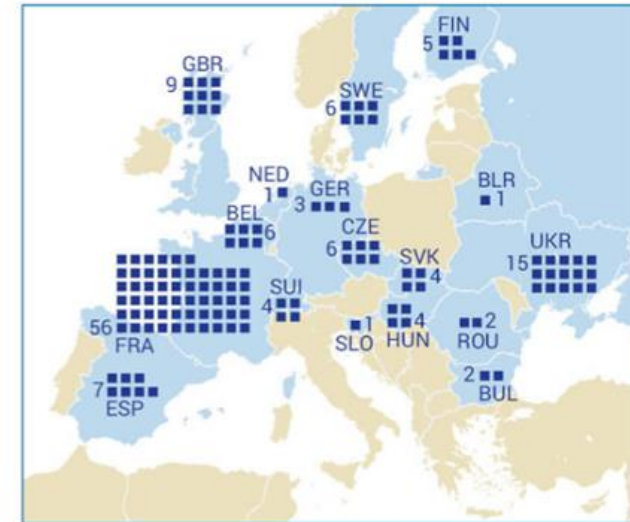
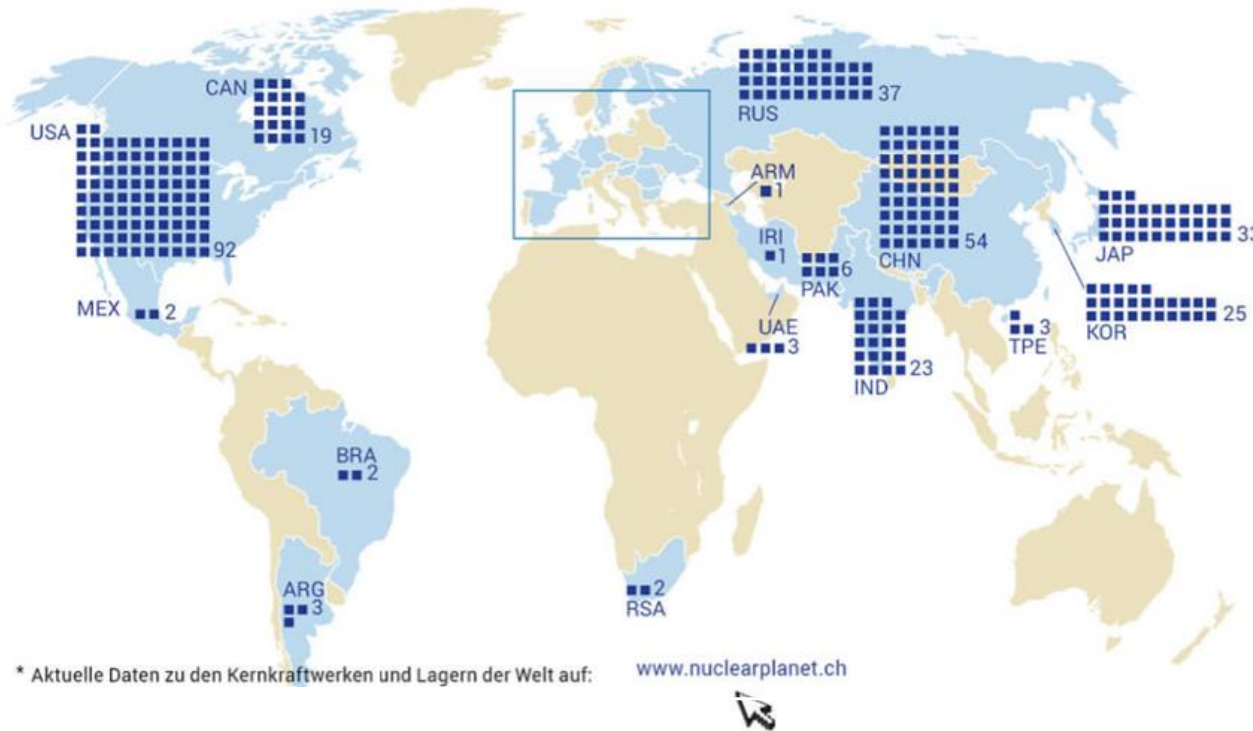
Standard & Poor's Rating: AA-

- Both, the key members and the other 16 members, have had outstanding ratings for years

05 Our Engagement

Nuclear Power Plants worldwide

31.12.2022

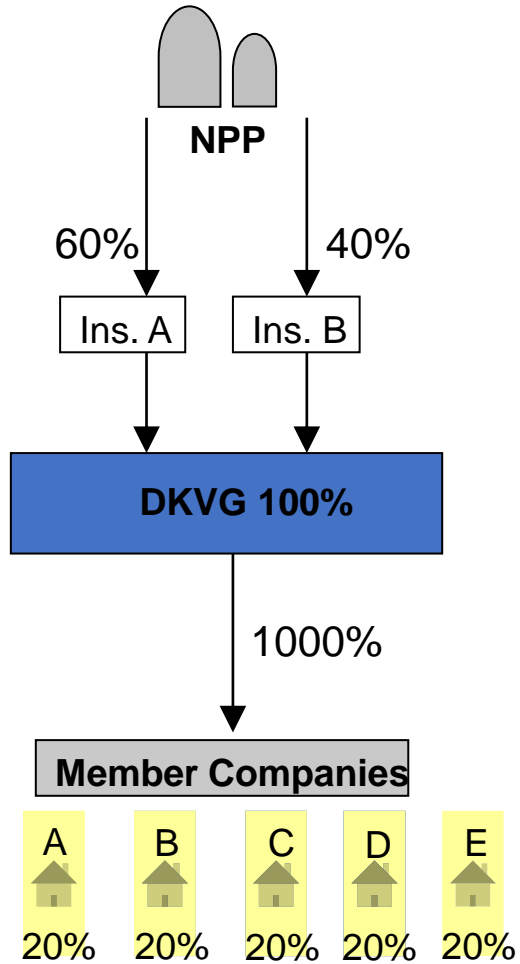


- Belgium
- Brasil
- Bulgaria
- Canada
- Czech Republic
- China
- Germany
- Finland
- France
- Hungary
- Japan
- Mexico
- Netherlands
- Romania
- Sweden
- Switzerland
- Slovakia
- Slovenia
- Spain
- South Africa
- South Korea
- Taiwan
- UK
- Ukraine
- USA
- UAE

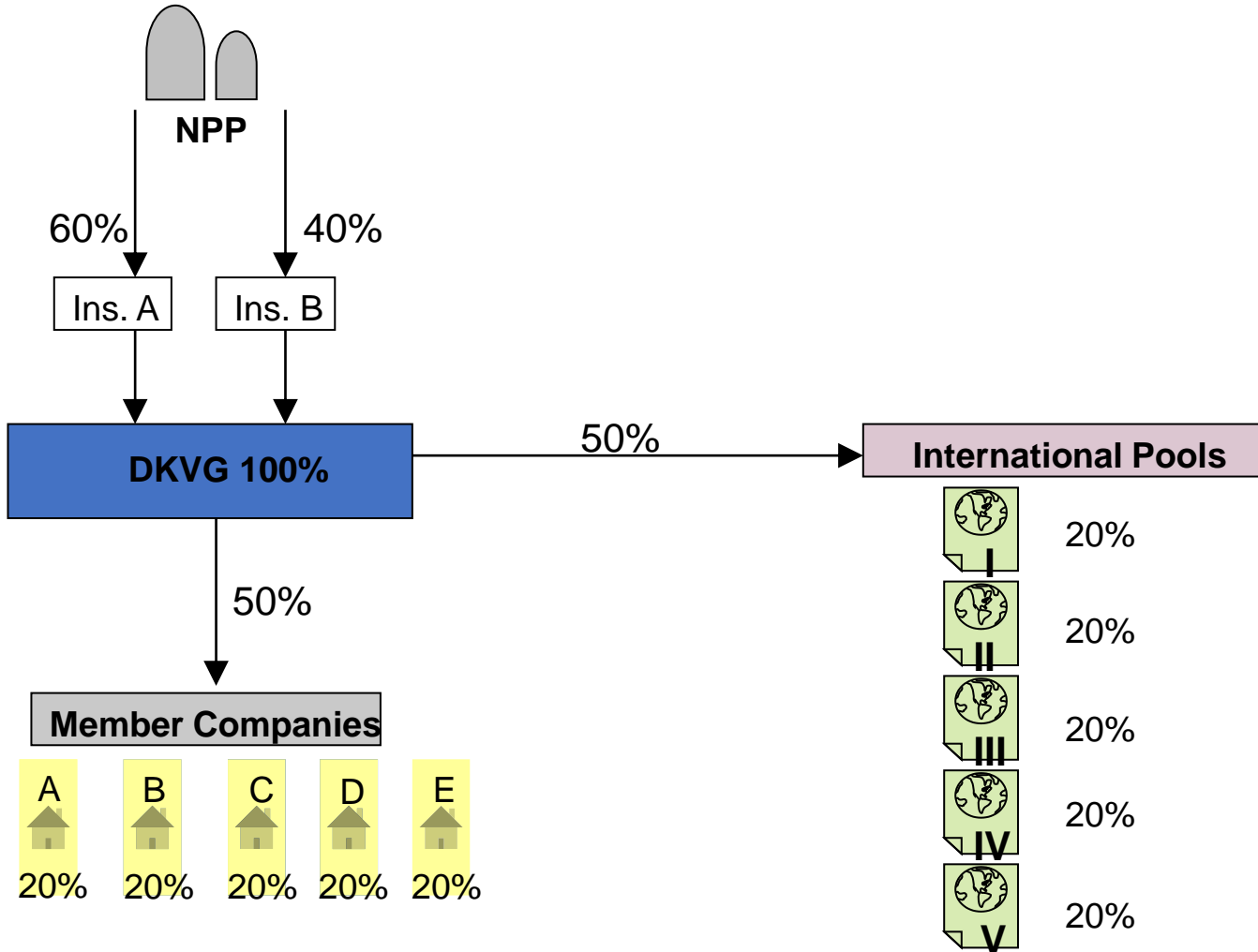
At the moment no cover regarding: Argentina, Armenia, Belarus, India, Iran, Pakistan, Russia und Turkey

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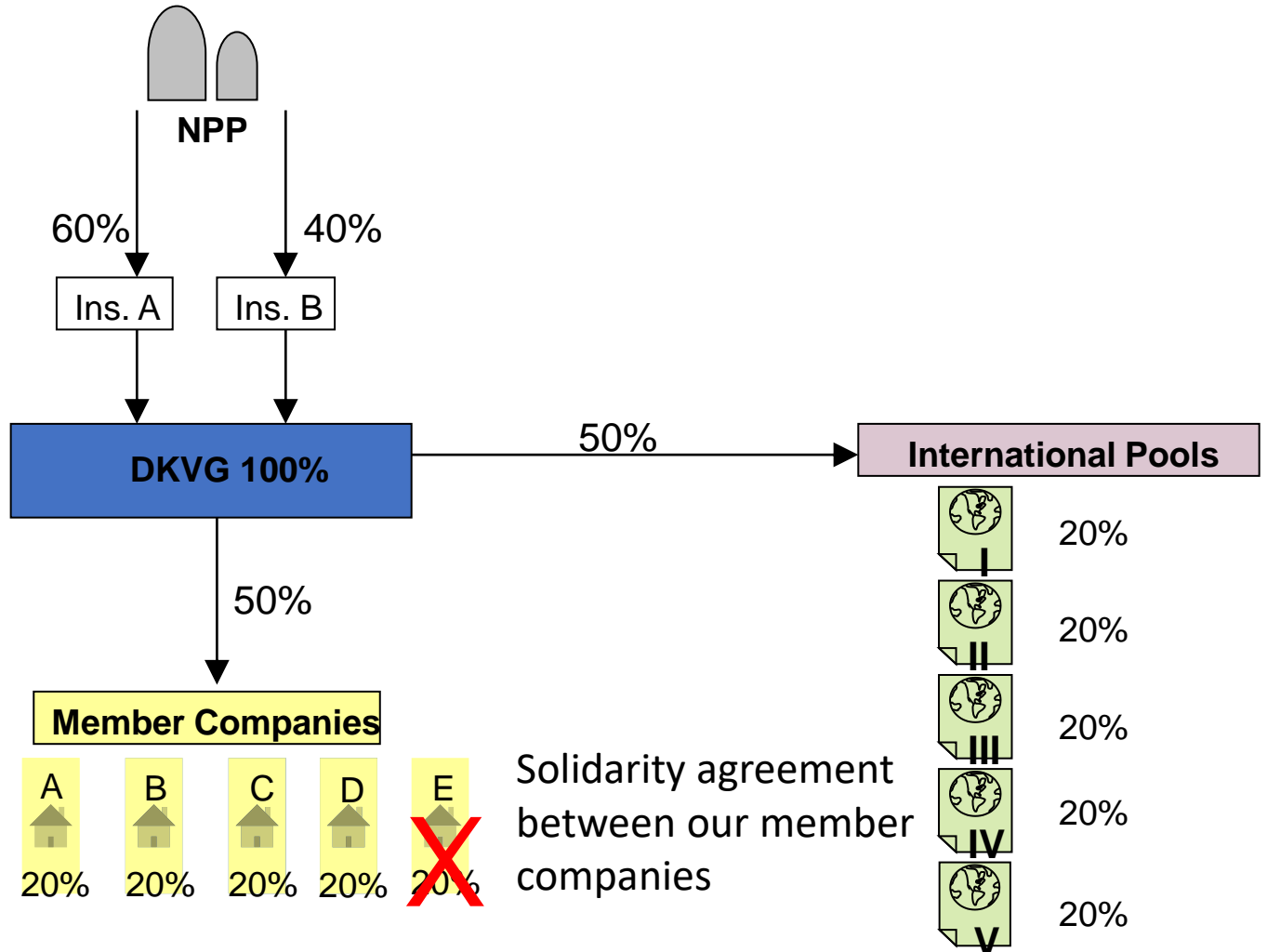
01 Function of the German Pool (1/6)



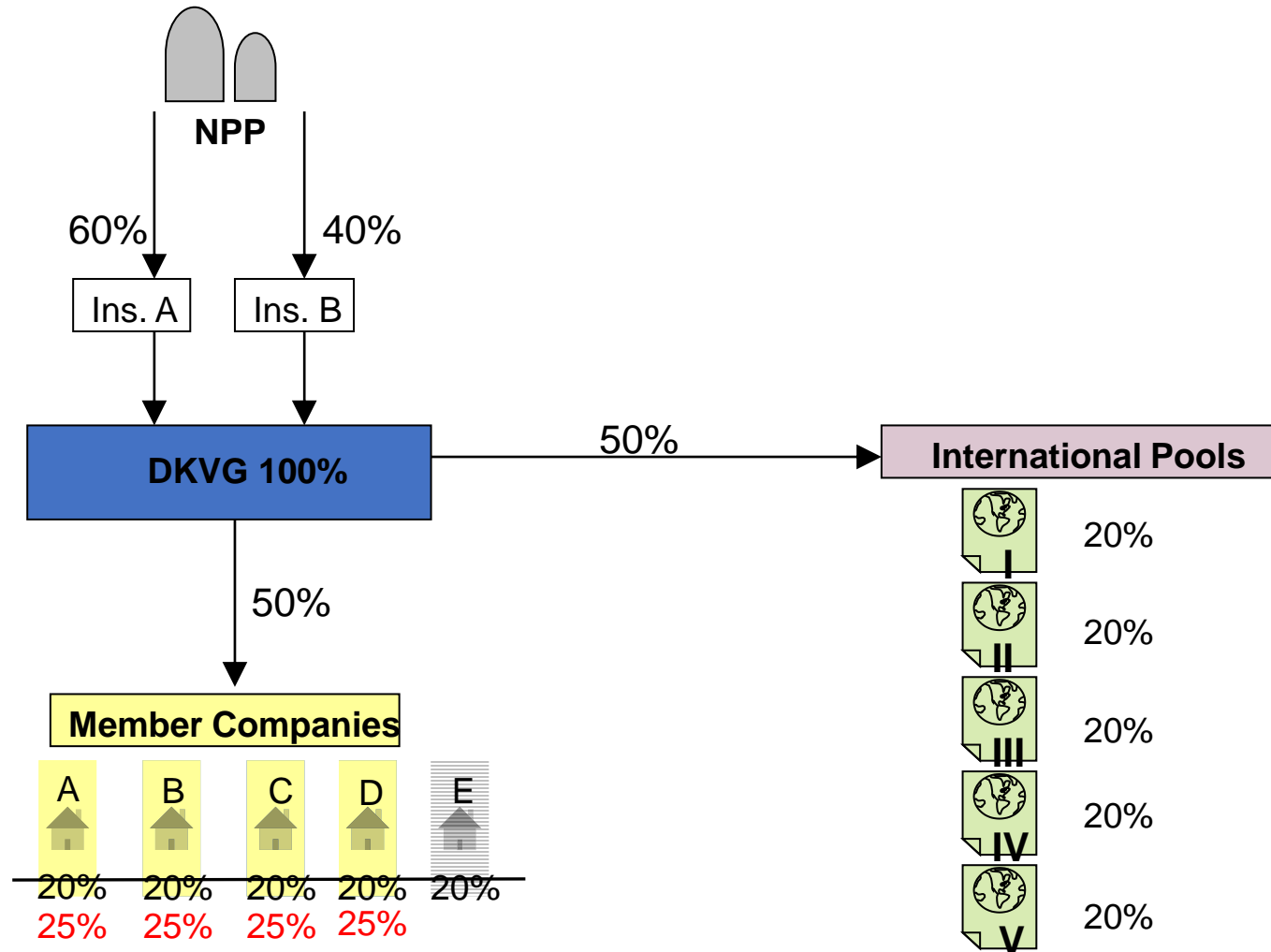
01 Function of the German Pool (1/5)



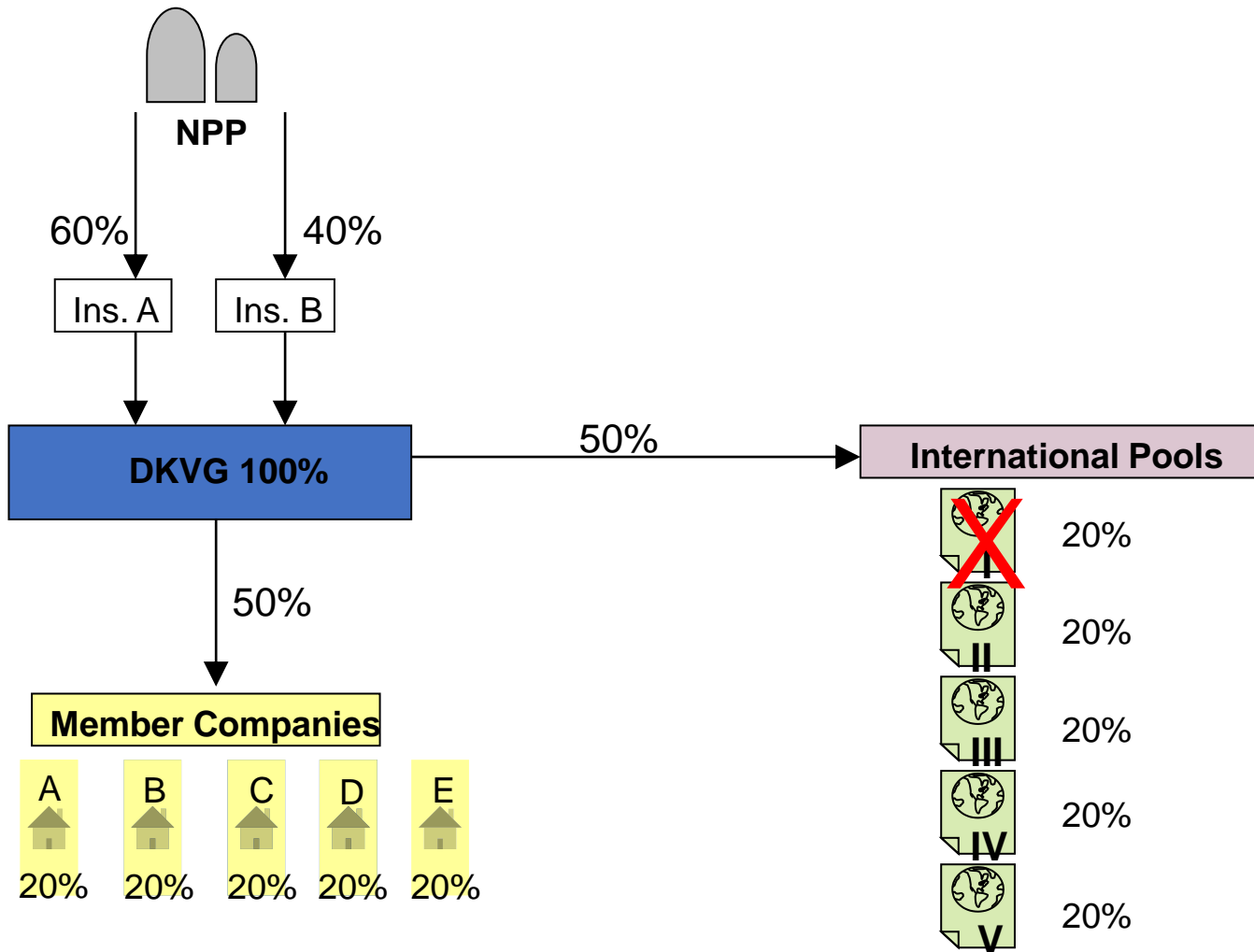
01 Function of the German Pool (2/6)



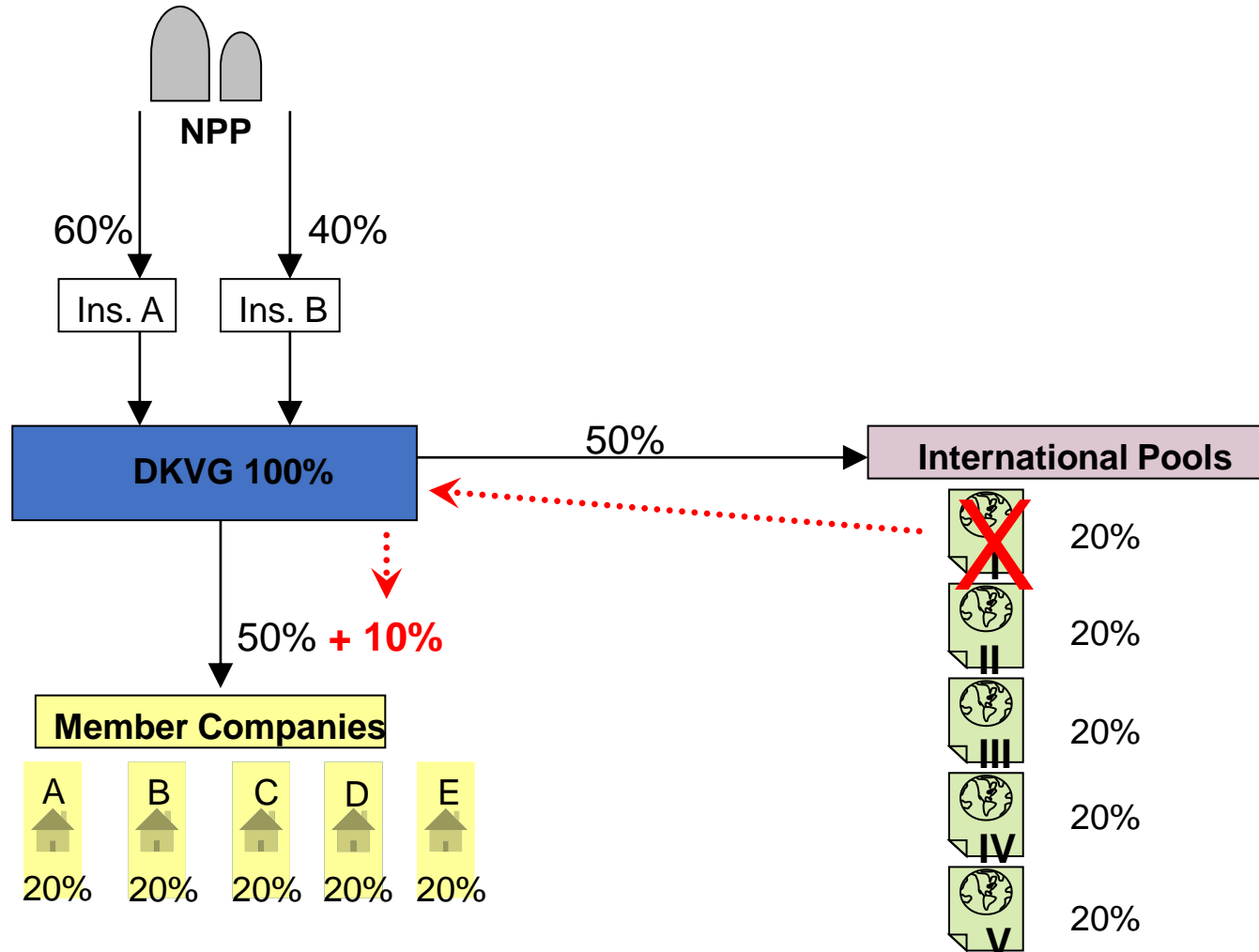
01 Function of the German Pool (3/6)



01 Function of the German Pool (4/6)



01 Function of the German Pool (2/6)



03

Complexity of nuclear transports

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03 Complexity of nuclear transports

➤ Paris Convention 2004 (Substantial extension of the territorial scope (Art. 2 of the PC))

a Contracting Party

a Party to the Joint Protocol (of course provided the involved PC state also is a party to the JP)

states without any nuclear installation (Non-Contracting-State)

states which have a nuclear third party liability legislation offering equivalent reciprocal benefits and based on the same principles as the PC

➤ Paris Convention 2004 (Privileged Non-Convention-State and Non-Privileged Non-Convention-State)

Privileged like Luxembourg (no nuclear installation)

Non-Privileged like Russia (VC but no JP)

➤ Application of two liability regimes in parallel

2 limits apply

2 competent courts

2 laws

04

Example

04 Example

- The transport route includes the territory of the insurer
- The liability of the liable operator follows the transport through the territories of PC and/or VC countries (and on the high seas)
- Special conditions in respect of transiting countries (Article 7(e) and 7(f) innocent passage of the PC)
- Sending operator of a nuclear installation is the liable party
- The liability can be transferred to the receiver
- The liability can be transferred to the carrier from the sender or receiver (depending on countries' legislation)

04 Example

Location where the transport begins and ends

Timespan

List of countries transited

In case of transiting the see/high see:

Flag States of the vessel (www.vesselfinder.com)

Maritime map (<https://www.openstreetmap.org/#map=7/52.349/-2.043>)



05

Classification of transports

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05 Classification of transports

A. Coverage of national transports

A.1: Transport between two nuclear operators in the same state

A.2: International transport, transiting the national territory BUT the requested insurance is limited to national territory

B. International transports starting or ending at the nuclear installation of the liable operator domiciled in a PC State

B.1: Transport to or from another PC state

B.2: Transport to or from a VC state (PC ⇔ VC)

B.3: Transport to or from a Non-Convention state (PC ⇔ NC)

06

What is the risk?

06 What is the risk?

- Viewpoint of the underwriter
 - More than 1 billion safe consignments of radioactive material since 1961 when IAEA regulations were issued
 - More than 400 sea voyages (> 3 million kilometre) of used nuclear fuel of High Level Waste (HLW)
 - > 7000 shipments of used fuel (90,000 tons) since 1971
 - Accidents occur, but never one in which a container with highly radioactive material has been breached, or has leaked

✓ 06 What is the risk?

1984: Moint-Louis (France) – RoRo cargo ship

- Collision of a ferry and a vessel carrying 30 containers of < 1% enriched UF₆ 6 miles off the Belgian coast
- All containers recovered and no release of radioactivity, but the wreck had to be removed
- Cost: EUR 15 Mio.
- Insurance costs Without 2004 protocol: No
- Insurance costs: With 2004 protocol: Yes



06 What is the risk?

1997: MSC CARLA (Panama) – Container ship

- The container ship broke in two parts on the Atlantic Ocean (Azors)
- 3 type B packages containing ^{137}Cs (is a [radioactive isotope](#) which is formed mainly by [nuclear fission](#). It has a [half-life](#) of 30.23 years) were lost when the bow portion sank at a depth of 3,000 m
- In 2027 half –life is finished
- Insurance costs Without 2004 protocol: No
- Insurance costs: With 2004 protocol: Yes



06 What is the risk?

2014: Port of HALIFAX (Canada)

- Uranium Hexafluoride. Uranium and fluorine, which is highly volatile, extremely toxic, radioactive and corrosive
During the unloading of a container ship harbour workers dropped a flat rack with four canisters containing enriched UF₆
- By means of precaution the authorities ordered evacuation of the terminal
- There was no release of toxic UF₆ despite the height of fall (6m)
- Insurance costs Without 2004 protocol: No
- Insurance costs: With 2004 protocol: Yes

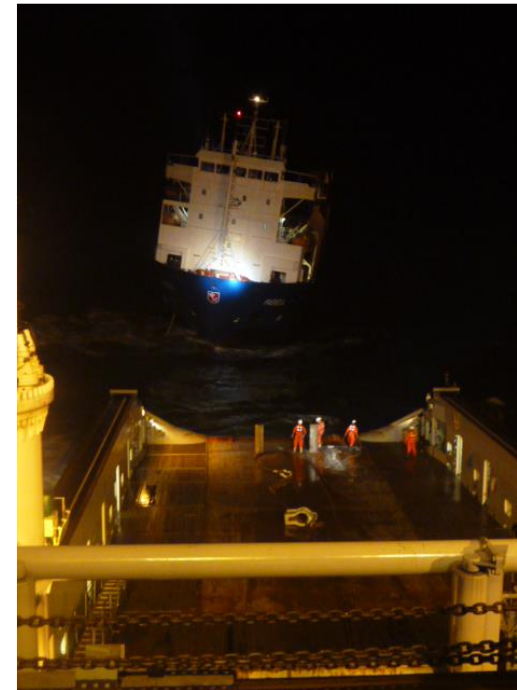


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06 What is the risk?

2014: MS PARIDA (Denmark) – RoRo cargo ship

- During a transport of cemented radioactive waste, a fire broke out in the funnel. The engine could not be restarted after the fire was extinguished.
- Due to strong wind (force 9) the ship without power started drifting towards the Scottish coast and there was a risk of allision with a nearby oil platform. All 52 people on the platform had to be evacuated by the



The ship was rescued by an ocean tug

- Insurance costs Without 2004 protocol: No
- Insurance costs: With 2004 protocol: Yes

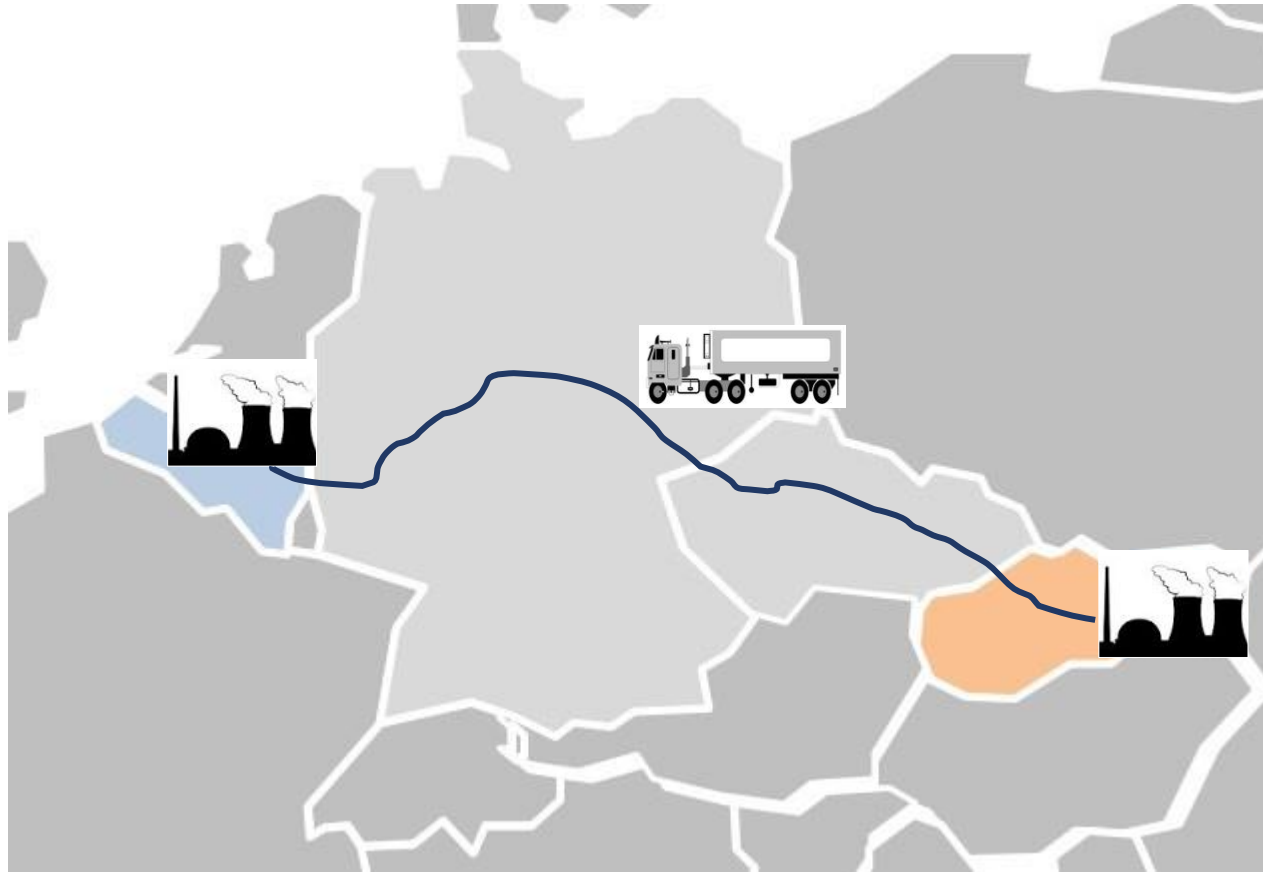
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07

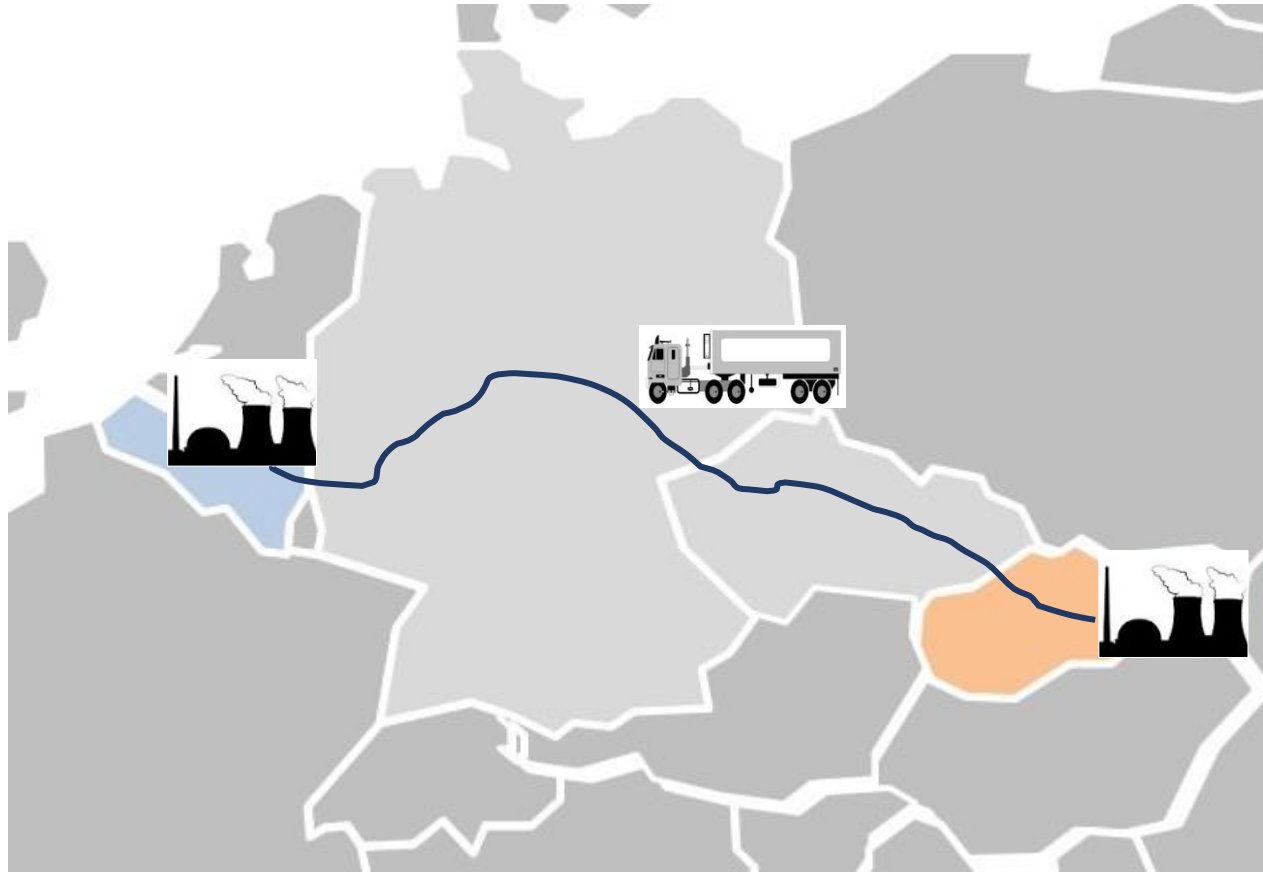
Case Study

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07 CASE STUDIES 1/3

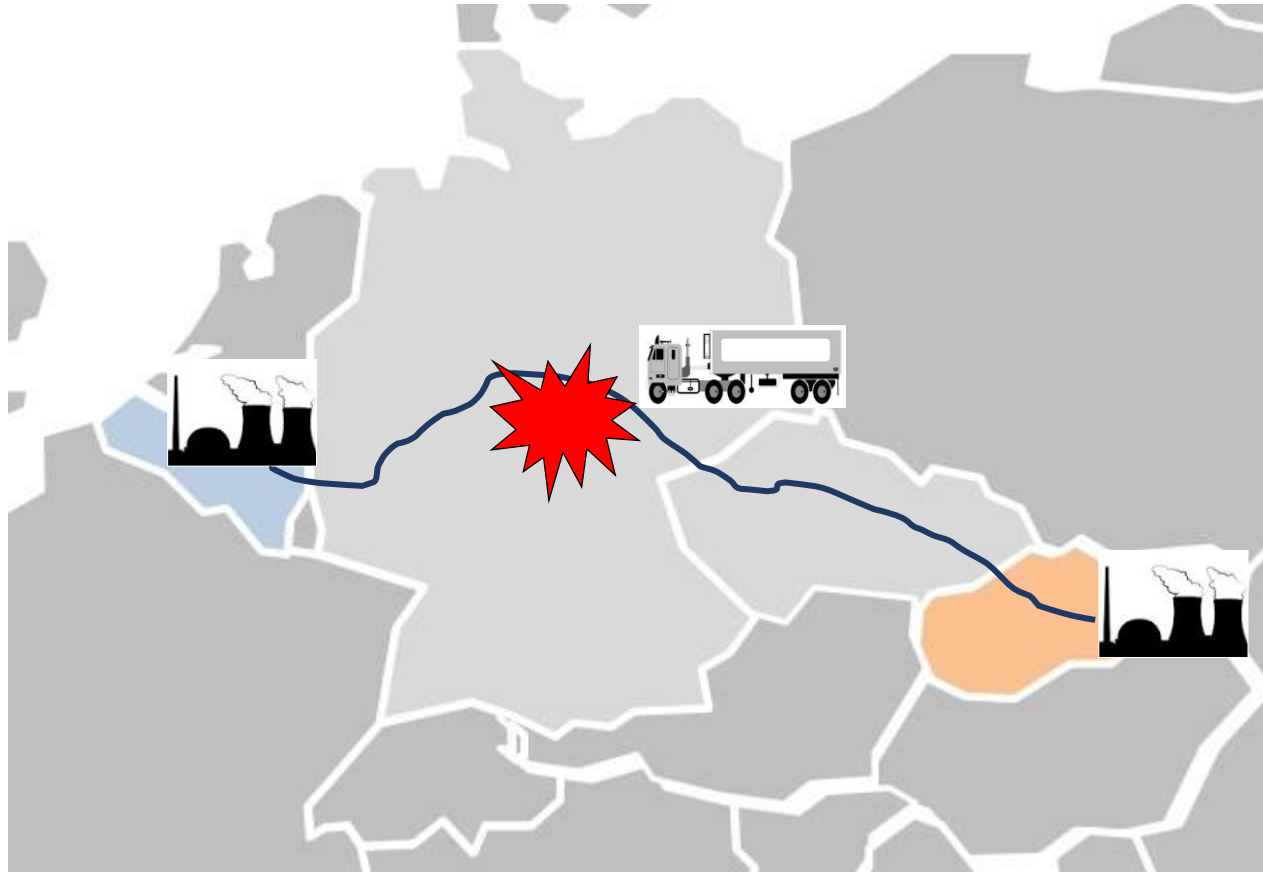


- Transport on a lorry
 - from a nuclear installation in Slovak Republic
 - to a nuclear installation in Belgium
- Slovak Republic: VC/JP
- Belgium: PC (no JP!)
- ▶ **No treaty link**



- Liability
 - of Slovak operator (Art. II.1.(b)(iv) VC)
 - of Belgian operator (Art. 4(b)(iv) PC potentially for the entire journey)
- HOWEVER subject to territorial application of either convention (Art. 2 PC; no provision in VC 1963)

✓ 07 CASE STUDIES 3/3



Example: accident in Germany

- Liability of Belgian operator under PC rules
- Liability of Slovak operator under VC rules, provided VC 1963 (+ Slovak legislation) applies to damage suffered on German territory

► **Overlap and/or uncertainty**

08

Challenge for the Insurance Industry

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08 Summary

- The financial security limit in accordance with the state where the liable operator is domiciled
- An increased financial security limit in accordance with 7(e) in the PC.
- 2004 Protocol has brought a substantial extension of the territorial scope, and insurance of the new head of damage
 1. loss of life, personal injury
 2. loss of or damage to property
 3. economic loss related to 1 and 2
 4. reinstatement of impaired environment
 5. use or enjoyment of environment
 6. preventive measures
 7. damages due to a grave natural disaster of exceptional character
- 8. extension of prescription period to 30 years
- Overlapping conventions if one party did not sign the JP

Thank you

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