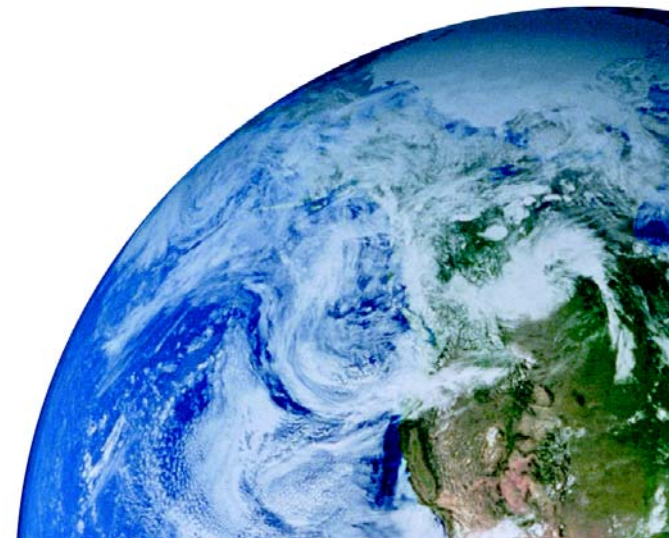


# World Nuclear University Summer Institute 2008

## Transport of Radioactive Materials Case studies

Michel Hartenstein



# Case study 1 : denial and delay (1/4)

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- Many cases of denial and delay are reported by the nuclear industry:
    1. upfront
      - for medical, high-activity sources (Co60...) are not accepted on ships (too much hassle for one single container)
      - outrageous insurance coverage requested by canals, bridges
      - stevedores requesting extra inspections etc. following minor (as seen by nuclear industry) incidents
      - incompatibility between additional country regulations (Belgium requesting exact activity well in advance, making transport impossible...)

# Case study 1 : denial and delay (2/5)

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- Many cases of denial and delay are reported by the nuclear industry:
    - lines have stops in ports that do not accept nuclear
    - often only one carrier available for one given link : high vulnerability to any disturbance
    - low volumes elicit no interest from maritime carriers, mostly as demand presently exceeds offer and carriers do not compete for additional business

# Case study 1 : denial and delay (3/5)

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- Many cases of denial and delay are reported by the nuclear industry:
    2. unpredictably
      - airline pilots may refuse parcels for any reasons, including presence of animals, quoting late or insufficient documentation..; for medical, delays mean the loss of product, to patients' detriment
      - new security screening of containers bound for the US (megaport initiative) will "ring" for legitimate radioactive material shipments and be stopped, causing ship or train delays
      - stevedores requesting extra inspections etc. following minor (as seen by nuclear industry) incidents

# Case study 1 : denial and delay (4/5)

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- Many cases of denial and delay are reported by the nuclear industry:
    - transit licences denied, prohibiting stops for cargo liners
    - collateral damage, such as British Airways planes contaminated by polonium 210
    - activists delay shipments by spurious actions
  - Could the real reason be fear?

# Case study 1 : denial and delay

1. According to you, what are the (real) reasons for denial and delay of shipment? You may want to address separately the carriers for each mode of transport, the ports and transport facilities, the different authorities, any organisation or stakeholder...
2. For each reason, suggest possible ways forward/around so that transport is facilitated or at least feasible
3. Imagine ways of enticing new carriers, ports, etc to accept the transport/transit of radioactive materials

# Case study 2

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# Case study 2 : how to deal with opponents targeting transport ?

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- **The aims of opponents:**
  - stopping nuclear, using all angles of attack short of open violence; belief in the cause unnecessary
  - transport is vital and readily accessible, stopping it has a domino effect, and it seems an easy prey

# Case study 2 : how to deal with opponents targeting transport ?

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- **Who are the opponents?**
  - nowadays, professional opponents to anything that brings money into the organisation
  - pacifists
  - in some countries, obvious links to the far-left (France...), with small political parties opposing transport directly or through fronts
  - attempts by French mayors to stop transit
  - for new routes, sometimes ordinary citizens quickly won over
  - ...
  - Source of financing?

# Case study 2 : how to deal with opponents targeting transport ?

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- **Opponents love media, media love controversy**
- **There is no hope of convincing activists**
- **Activists are not accountable**
  - some journalists are activists
- **Tactics**
  - harassment
  - direct action; chained to rails, trucks, shipmasts, impeding movement
  - scare tactics (transport threatens life of millions...)

# Case study 2 : how to deal with opponents targeting transport ?

- **Examples**

- in 2003, Greenpeace France blocked a plutonium convoy arriving to army barracks in Chalon-sur-Saône (France) and chained themselves to the truck, spray-painted it (damages reimbursed after lawsuit was won)
- in Germany, Switzerland, opponents routinely chain themselves to the railway track
- in France, this caused the death in November 2004 of a youth hit by a train
- in France, Greenpeace blocked a road by anchoring a truck to the roadbed; the head of SDN ("out of nuclear") stopped a spent fuel train next to Bordeaux main passenger station

# Case study 2 : how to deal with opponents targeting transport ?

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- **Examples**

- in Germany, the annual return of vitrified waste from France is a ritual carnival, with tens of thousands opponents and nearly as many police (what is the gameplay of authorities?)
- in France, Greenpeace boarded a ship with depleted UF6 bound for enrichment in Russia, claiming export of waste; chained themselves to loading masts; same ship harassed by inflatables in the Baltic Sea

# Case study 2 : how to deal with opponents targeting transport ?



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- **Legal actions**

- lately legal action have had some measure of success in France, partly due to terminology problems: ship with MTR prevented from unloading, import of spent fuel from NL
- legal action against transport for YM (Caliente corridor...)
- conversely, industry seeks upfront injunctions against activist actions (no activists within 100m of port, convoy...)

# Case study 2 : how to deal with opponents targeting transport ?

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- **What next?**

- Often there are so few opponents that media have to carefully choose their filming angle: in 2004, 6 opponents to MTR transport in Cherbourg, under 20 against military plutonium shipment in Charleston... Nuclear-free Seas Flotilla with a handful of nutshells...
- in France, activists fail to draw ordinary citizens in demonstrations against transport
- Lack of interest conducive to ever more extreme actions?

# Case study 2 : how to deal with opponents targeting transport ?

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- **Use of third parties and names**
  - activist groups commission reports from "independent" experts : John Large 2004 report against plutonium transport in France, 2006 report against spent fuel by train in the UK, Timm report in 2005 against transport of RAM in tunnels...
  - elderly yachtsman Riguidel sent sailing by GP, trespassing into military port of Cherbourg, protesting transport of plutonium

# Case study 2 : how to deal with opponents targeting transport ?

1. Do you consider opponents as a serious threat to RAM transport?
2. Is this opposition force useful to prevent industry complacency, to provide fresh ideas for safer transports?
3. What is the best answer to activist actions:
  - basically ignore them, solving problems en passant?
  - prevent actions, how?
  - systematically sue?
  - communicate more? less?
  - other?
4. What will opponents do next?

# Case study 3

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# Case study 3 : is RAM transport a terrorist target ?



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- **The aims of terrorists / clandestine organizations / rogue States:**
  - spread terror in populations : unpredictability, ultra-violence, preference for vulnerable and innocent targets
  - get at symbols: political or economic power, religious community
  - cause numerous casualties and impressive damage : industrial installations, densely populated area, airplanes
  - get maximum exposure: choice of period (e.g. Olympic Games in Atlanta), use of the media
  - seize materials for subsequent use

# Case study 3 : is RAM transport a terrorist target ?



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- **The alleged attractiveness and vulnerability of radioactive materials transport:**
  - most types of materials are transported: solids, powder, liquids; fissile or not; very low to high-activity, very low to high dispersability; some with other dangerous properties; transports everywhere (supermarket for terrorists ?)
  - dispersion of nuclides on the spot, later use of materials (nuclear weapon, dirty bomb, concealed sources...)
  - no escort for most transports, no or little surveillance, frequent/long stops for refueling, rest...
  - anyone can come close to the package during most of the transport
  - any land vehicle is fairly easy to block

# Case study 3 : is RAM transport a terrorist target ?

- **The alleged vulnerability of nuclear materials transports:**
  - piracy is on the rise (?), not only at sea
  - regular thus predictable schedules, routes
  - some security features visible
  - use of conveyances by illegal immigrants
  - activist sites facilitate the work of terrorists:
    - pointing at vulnerabilities (scary "expert" studies)
    - giving licence plates and description of vehicles
    - requesting spotters to provide intelligence...
    - playing with fire ("we got close to the package, what if we had been terrorists")

# Case study 3 : is RAM transport a terrorist target ?



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- **The alleged vulnerability of nuclear materials transports:**
  - packages not designed against weapons
  - security studies either are classified (so opponents claim they do not exist) or they divulge too much and are a manna of nasty ideas
  - official bodies unwittingly publish sensitive data and studies in conferences, on the internet (the French IRSN tests of shaped charge against bare plutonium packages...)
  - breach of security laws not always prosecuted
  - transparency vs security

# Case study 3 : is RAM transport a terrorist target ?



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- **The alleged vulnerability of nuclear materials transports:**
  - classified transport operations receive a wide range of physical protection measures, from armor to tracking to escort; but most are not visible, so activists claim they do not exist
  - protection of classified information give rise to accusations of secrecy and dissimulation
  - quantities in any transport are limited and do not compare with inventories on sites
  - perfect feed for media
  - "security apportioned to desirability" not well accepted in post 9/11 context

# Case study 3 : is RAM transport a terrorist target ?

- **The alleged vulnerability of nuclear materials transports:**
  - In 2003, Greenpeace France blocked a plutonium convoy arriving in army barracks in Chalon-sur-Saône (France), to demonstrate that a terrorist attack on such a shipment was achievable.
  - ANSTO's research reactor, located close to Sydney, could have been targeted by terrorists. According to a local police report, 8 suspects have been stopped near the facility in 2004. The same people had previously attempted to purchase bomb-making chemicals.

# Case study 3 : is RAM transport a terrorist target ?



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- **The alleged vulnerability of nuclear materials transports:**
  - a French islamic activist arrested in Morocco in June 2003, has claimed being interested in the plutonium road transports that transit between the French nuclear sites. He mentioned these as “potential targets” - but later denied.
  - there is no report that a shipment of nuclear materials has ever been reported attacked by terrorists or the like.

# Case study 3 : is RAM transport a terrorist target ?



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- 1. How do you rate RAM transport as a valid terrorist target?**
- 2. What would be likely sought? immediate damage, theft of weapon materials...**
- 3. Which scenarios?**
- 4. Identify strengths and weaknesses**
- 5. What should be the respective responsibilities of the State(s) and of industry for transport security?**
- 6. What should be done to reduce the risks?  
(discontinuing transport is not an option)**
- 7. Should a package design include security?**