



Can't Pay, Won't Pay:

Plutonium and high-level nuclear waste transports and the inadequacies of international liability arrangements

Summary:

Transports of high-level radioactive waste, spent nuclear fuel and plutonium or plutonium-based fuels around the world are increasing. An accident occurring during the transport of these highly radioactive and radio-toxic materials would seriously threaten people's health, the environment and the economies of countries along the transport routes.

While the costs to individuals and countries affected by a nuclear transport accident could be huge, there are no adequate international arrangements in place to ensure compensation for the damage caused. The handful of countries engaged in the international transport of increasingly large quantities of nuclear materials are especially reluctant to accept liability for accidents or to guarantee compensation to the dozens of countries around the world that they are putting at risk every time there is a shipment.

The only real solution to the problem is for these nuclear transports to cease entirely. However, in the interim, and to ensure transparency about the true costs of these transports, states should seek to develop measures to exclude these transports from waters under their jurisdiction and to ensure compensation for all damage suffered in the event of an accident. This would require coastal and island states to develop national or regional legal measures for comprehensive and realistic liability and compensation arrangements. They should also obtain bilateral agreements with respect to liability and compensation for accidents during these transports from the United Kingdom, Japan and France.

Notably, Japan has made special compensation arrangements with at least one region in Japan, the Aomori Prefecture, that specifies that losses due to a decline in the price of agricultural, forestry, and marine products, business losses (sales losses), and other economic losses will be compensated for, even if a nuclear incident does not result in a release of radioactivity. Given that such arrangements have been put in place, in addition to provision for unlimited liability on the part of the nuclear operator, within Japan, there is no reason why Japan should deny similar measures to protect countries along the Japan-Europe transport routes.

The Risks of an Accident During Shipments

Three countries, in particular, are engaged in shipping spent nuclear materials around the globe - Japan, France and the United Kingdom. Japan sends spent nuclear fuel by ship to the United Kingdom and France for 'reprocessing' (where plutonium is removed from the used fuel, and large quantities of radioactive wastes are produced). While lesser radioactive wastes are disposed of at the reprocessing plants, emitted as radioactive gases or discharged into the sea, France and the United Kingdom eventually return the most radioactive (or 'high-level') part of the waste and the hazardous and weapons-usable plutonium (either as plutonium or as mixed plutonium-uranium fuel (MOX)) by ship to Japan.

The shipments to and from Japan pass close to dozens of countries around the world. The vast majority of these countries have no involvement in the nuclear industry and therefore have little practical experience or capability to respond to an accident involving the large quantities of radioactive materials involved.

The United Kingdom, France and Japan – and their companies engaged in the transports – all claim that the possibility of an accident is low and, even if one did occur, the chances of radioactivity being released would be small. What these defenders of the transports fail to address is the simple fact that, should radioactivity be released into the marine environment or into the atmosphere (in the case of a fire), the consequences could be severe, irreversible and last indefinitely, owing to the extreme hazards the cargo poses and the long half-lives of the radioactive materials involved.

Consequences for Coastal States

Despite the enormous expenses incurred and considerable efforts made in attempts to clean-up the huge area affected by the 1986 Chernobyl disaster, more than 13 years after the accident vast areas of land are still highly contaminated and an exclusion zone still surrounds the reactor. Restrictions currently still apply on the sale and consumption of agricultural produce, even in some countries hundreds of kilometres distant from Chernobyl.

Experts agree that an accident at sea would pose much greater problems in trying to deal with the contamination than an accident on land. The International Atomic Energy Agency (IAEA) has concluded that "*in view of the enormous scale of the oceanic environment it seems highly unlikely that any deliberate decontamination procedures could ever be envisaged.... Protection can be achieved [only] by imposing bans or limits on the consumption of sea-food.*"¹

Many of the economies of coastal and island states' along the nuclear transport routes are heavily dependant on agriculture, fisheries and tourism. This is especially the case for many small island developing states who are thus extremely vulnerable to the effects of a nuclear transport accident. Even if there was little or no immediate release of radioactivity, the economic consequences could be severe because of the likely immediate negative

¹ Cleanup of Large Areas as a Result of a Nuclear Accident, IAEA, Technical Reports Series No. 300, Vienna, 1989.

consequences on trade and tourism of the accident and the costs of salvage. If there was a large-scale release of radioactivity, the health, environmental and economic consequences would be disastrous. The International Union of Marine Insurers have conservatively estimated that a fire on board a ship transporting nuclear materials in the southern North Sea could cause damage worth US\$ 7 billion.² A more recent study estimated the potential costs of a serious accident in the Federated States of Micronesia (FSM) during the shipment of high-level waste from France to Japan. It concluded that the Federated States of Micronesia could expect to lose more than half of its total annual income from exports, tourism and fishing fees (by far the most important sectors of its economy).³

Existing Liability and Compensation Arrangements

There are several international agreements which deal with liability and compensation for nuclear accidents. However, these were developed with the intention of protecting the nuclear industry from potentially catastrophic liability claims in the event of an accident rather than protecting the victims or providing full compensation for damage caused. In terms of the level of protection afforded to victims and the recognition of the types and extent of damage which should be compensated, the provisions of the nuclear liability conventions currently in force lag considerably behind the corresponding provisions seen in modern non-nuclear liability treaties and in domestic law.

While the details of the various nuclear liability conventions differ, they all suffer from the same basic flaws:

- they allow amounts of compensation to be limited far below the likely costs of a major accident (in the case of the 1963 Vienna Convention, the limits can be as low as US\$ 90 million⁴);
- they allow certain types of damage to be excluded such as environmental and economic damage, and the costs of preventive actions. These are the very types of damage which should be covered. Economic damages caused to island states such as damage to tourism and fisheries caused by direct or indirect damage or the perception of damage due to an accident could be both enormous and unrecoverable, as the prospect of recovery of such damages in many legal systems and under present conventions would be virtually nil. Yet as will be described shortly, Japanese nuclear companies have signed a legally binding agreement covering just these sorts of losses within Japan
- they generally require that victims would have to bring claims in the courts of the countries responsible for the damage rather than in their own courts – thereby imposing an additional burden of legal costs and delay on victims; and they severely limit the time-frame in which claims for compensation might be made.

² “*Insurers to Refuse Cover on Nuclear Accidents*”, The Independent, 3 March 1991.

³ Transportation Accident of Ship Carrying High-Level Radioactive Waste – Part 1: Impact on the Federated States of Micronesia, Radioactive Waste Management Associates, New York, 31 July 1997.

⁴ The Vienna Convention sets a minimum limit of liability to the operator of 5 million 1963 United States Gold Dollars, equivalent to approximately SDRs 60 million or US\$ 90 million, assuming an exchange rate of 1.5 SDRs to the US\$.

Following the Chernobyl disaster, which highlighted many of these problems, there have been attempts to try to up-date the nuclear liability conventions, but the old conventions still remain in effect and the new instruments, which contain many of flaws of their predecessors, have not entered into force.

In addition to the detailed flaws these nuclear liability conventions contain, they also pose more general problems because they were designed to protect, primarily, the operators of nuclear power plants. Thus, the vast majority of coastal island states along the transport routes have not joined the conventions as they do not adequately protect their vital interests nor take into account the possibility of accidents during the shipments of large quantities of nuclear materials around the world. In particular, for coastal and island states, joining the conventions would provide no legal guarantees of compensation and could actually restrict their chances of obtaining any realistic compensation in the event of a transport accident.⁵

In effect, because the United Kingdom, France and Japan have accepted little or no formal legal responsibility for the threats posed to most coastal and island countries by nuclear transports, the states along the transport routes have no credible guarantees of receiving any compensation whatsoever in the event of an accident.

“Protecting Our Own” – the arrangements for domestic compensation

Both France and the United Kingdom have enacted domestic laws and entered into regional agreements for liability and compensation for nuclear damage that exceed the minimum provisions of the Vienna Convention. However, even these measures would not ensure full compensation for a transport accident. In any case, the compensation provided under these measures is not extended to the vast majority of coastal and island states along the transport routes and there is thus no guarantee of compensation.

Japan is not a party to any of the international nuclear liability conventions. However, it has domestic laws which contain similar liability and compensation requirements for nuclear damage suffered in Japan as are currently found in the United Kingdom and France. Under Japanese domestic law, the operator is strictly and exclusively liable for damage arising from a nuclear accident and there is no limit to the amount of liability. Although the liability of the operator is unlimited, he is required to maintain 30 billion Yen's (approx. US\$ 425 million) worth of insurance with the government, allowing for additional state aid where the amount of damage exceeds the insurance required. As Japan has no treaty relations with countries along the transport routes for nuclear accidents, it is unclear what if any compensation victims might be able to obtain in the event of an accident for which a Japanese operator was liable. At any rate, any claim for compensation by a victim in a coastal state along the transport route would have to be brought before a Japanese court.

⁵ Of the conventions currently in force, most coastal and island states could only become parties to the 1963 Vienna Convention. The United Kingdom and France are party to a different instrument, the 1960 Paris Convention and Japan is not a party to any international liability instrument. While the Paris and Vienna Conventions are linked by a 'Joint Protocol' adopted in 1988, the United Kingdom has not become party to this (although France has). Thus, in the event of an accident, even if coastal and island states joined the Vienna Convention, they would still not necessarily have any treaty relations to the nuclear state legally responsible for a shipment and thus no guarantee of receiving any, even limited, compensation. (Additional details on these complex legal issues are available on request.)

However, Japan has made special compensation arrangements with at least one region in Japan that go beyond the basic requirements of Japanese law. The Aomori Prefecture contains a number of major nuclear installations and has been the destination of high-level radioactive waste shipments from Europe to Japan up until now. Because of local concerns about the nuclear activities there, Japanese nuclear companies⁶ have signed a legally-binding agreement with the prefecture and the most directly affected local community (Rokkasho) that guarantees additional compensation in the event of an accident or incident.

Most notable is that the agreement specifies that losses due to a decline in the price of agricultural, forestry, and marine products, business losses (sales losses), and other economic losses will be compensated for, even if a nuclear incident doesn't result in a release of radioactivity. Given that such arrangements have been put in place within Japan, there is no reason why Japan should deny similar measures to protect countries along the Japan-Europe transport routes.

The Way Forward

The only comprehensive solution to the problems posed by these nuclear transports, would be for these to be halted entirely by ending the practice of reprocessing. However, until such time as this is achieved, states should act to reduce the risks to which they are exposed. Minimum first steps would include developing measures to exclude these transports from waters under their jurisdiction and to ensure compensation for all damage suffered in the event of an accident. This would require coastal and island states to develop national or regional legal measures for comprehensive and realistic liability and compensation arrangements, and to obtain bilateral agreements covering liability and compensation for accidents and unforeseen events which might occur during transports between the United Kingdom, Japan and France. Austria, for example, a country without nuclear power plants of its own, but which has a number of neighbouring countries with reactors located close to its borders, has adopted its own national liability legislation designed to protect its citizens and ensure full compensation.

Adequate liability and compensation laws and agreements should: be based on the concept of strict liability; allow victims to bring claims before the courts of the country where the damage was suffered; not contain any limitation on the total amount of liability payable by industry and governments conducting the shipments; require the establishment of a fund or other financial guarantee by the industry and governments engaged in the shipping of nuclear materials in order to assure that sufficient funds are available to compensate potential damage; and provide compensation for all types of damage, including damage to the environment, costs of preventive measures and remedial actions, and consequential, economic and subsequent losses arising from these.

⁶ Japan Nuclear Fuel Service Co. Ltd. (JNFS), Japan Nuclear Fuel Industries (JNFI), and Federation of Electric Power Companies (FEPCO).

July 1999

Further information: contact Simon Carroll at Greenpeace International
ph+31 20 523 6222
simon.carroll@ams.greenpeace.org
Greenpeace on the web: www.greenpeace.org