

Transporting nuclear materials – The Atlantic Osprey



The Atlantic Osprey

Multi-purpose cargo vessel

The Atlantic Osprey is part of our fleet of ships used to transport nuclear materials and meets the International Maritime Organisation INF2 classification. The Atlantic Osprey is primarily used on European and Atlantic Routes.

The Atlantic Osprey is a multi-purpose cargo vessel with lift-on/lift-off capability. Access for vehicles can be gained via a stern door, which when open, serves as an access ramp.

Because the Atlantic Osprey carries nuclear materials, procedures on board are very different to other ships. For a conventional shipment, it would only be necessary to close and seal the stern door before departure. In addition to this, the Atlantic Osprey has a fixed bulkhead incorporating a hydraulic watertight door to improve operability, a further bulkhead in the main hold which together provide enhanced subdivision.

Safety on board

As an INF2 classified vessel the Atlantic Osprey has the following features, which are additional to the requirements for other multi-purpose cargo vessels.

- A fire detection and alarm system: Although common enough items to be found on many vessels it is compulsory to have such systems on an INF Class 2 vessel
- A fixed water fire extinguishing system: The vessel must have a fixed fire extinguishing system in each cargo space, in addition to the CO₂ emergency fire protection system
- Fixed fire extinguishing system in machinery spaces: The main engine room and machinery spaces must have fixed fire extinguishing arrangements.
- Independent ventilation systems: Cargo space ventilation system is independent of other spaces
- An alternative source of electrical power: This is required so that damage involving the main supply would not effect the alternative source
- A Shipboard Marine Emergency Plan: each vessel must have a dedicated Shipboard Marine Emergency Plan which is approved by the appropriate administration, in this case the Maritime and Coastguard Agency (MCA)

International Nuclear Services and its subsidiary PNTL, have transported nuclear materials including spent fuel, high level waste, plutonium and nuclear fuels safely and securely throughout the world for over 40 years without an incident resulting in the accidental release of radioactivity.

Voyage security

A transport plan governs all aspects of voyages involving nuclear materials. The overall plan is subject to the approval of the United Kingdom Government's independent security regulator, the Office for Civil Nuclear Security (OCNS).

Physical protection

The measures taken to secure the vessel and cargo against potential threats meet the standards required by the United Kingdom Government's independent security regulator, OCNS and are in line with international requirements and recommendations contained within:

- The Convention on the Physical Protection of Nuclear Material (International Atomic Energy Agency INFCIRC274)
- The Physical Protection of Nuclear Material and Nuclear Facilities (International Atomic Energy Agency INFCIRC225)



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Emergency arrangements

As required by the International Atomic Energy Authority (IAEA), in the unlikely event of an emergency situation developing, a fully trained and equipped team of marine and nuclear experts is available on 24-hour emergency standby.

An expert crew

On board a fully trained and experienced crew manage the ship. Senior officers are qualified to perform the duties of their immediate superior. For example, the Chief Officer (second in command) holds a Master's certificate. All personnel are actively encouraged to enhance their skills and qualifications and to take relevant training courses.



Manually plotting courses is one of several backup navigational systems on the Atlantic Osprey

Regulatory requirements of the Atlantic Osprey

- Certified by the UK Maritime Coastguard Agency (MCA) as meeting INF2 classification
- IAEA Regulations for the Safe Transport of Radioactive Material
- IAEA Planning and Preparing for Emergency Response to Transport Accidents involving Radioactive Material
- Convention on the Physical Protection of Nuclear Material INFCIR274
- IAEA INFCIRC/225/rev.4 security requirements Physical Protection of Nuclear Material and Facilities
- IMO SOLAS (International Convention for the Safety of Life at Sea)
- IMO MARPOL (International Convention for the Prevention of Pollution from Ships)
- IMO IMDG Code (International Maritime Dangerous Goods)
- IMO INF Code (International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on board Ships)
- IMO ISM Code (International Safety Management)
- UNCLOS (United Nations Convention on the Law of the Sea)
- IMO ISPS Code (International Ship and Port facility Security)