PNTL

Pacific Heron and Pacific Egret

NEW INF3 CLASS VESSELS, THE PACIFIC HERON AND THE PACIFIC EGRET HAVE JOINED THE FLEET OF PACIFIC NUCLEAR TRANSPORT LTD (PNTL). THE PACIFIC HERON WAS DELIVERED IN 2008 AND THE PACIFIC EGRET IN 2010.


Pacific Heron


Pacific Egret

These are the latest generation of INF3 class PNTL vessels dedicated to nuclear transports. The design of the ships is a development of the current fleet of INF3 class ships incorporating current regulations and technologies. The cargo compartments are protected by a double hull, and all essential systems have an independent backup to provide redundancy and resilience.

The ships exceed the requirements of the INF code. PNTL's ships are classified by the International Maritime Organisation (IMO) of the United Nations at its highest level of INF3. The INF Code regulates shipments by sea of packaged irradiated nuclear fuel, plutonium and high level radioactive wastes.

PNTL OVERVIEW: PNTL IS THE WORLD'S LEADING NUCLEAR TRANSPORT SPECIALIST, WITH MORE THAN 40 YEARS OF EXPERIENCE WITHOUT ANY INCIDENTS INVOLVING THE RELEASE OF RADIOACTIVITY. PNTL USES DEDICATED VESSELS TO TRANSPORT SPENT FUEL, MOX FUEL ASSEMBLIES AND VITRIFIED HIGH LEVEL WASTE BETWEEN JAPAN AND EUROPE.

PNTL is owned by INS (62.5%), a Japanese consortium (25%) and AREVA through its subsidiary TN International (12.5%).

Factbox	
Length overall	103.92m
Breadth	17.25m
Draft	6.75m
Number of hold	4
Capacity	20 flasks
Design speed	14 knots
Deadweight (max)	4,916 tonnes
Principle cargo carried	MOX fuel assemblies

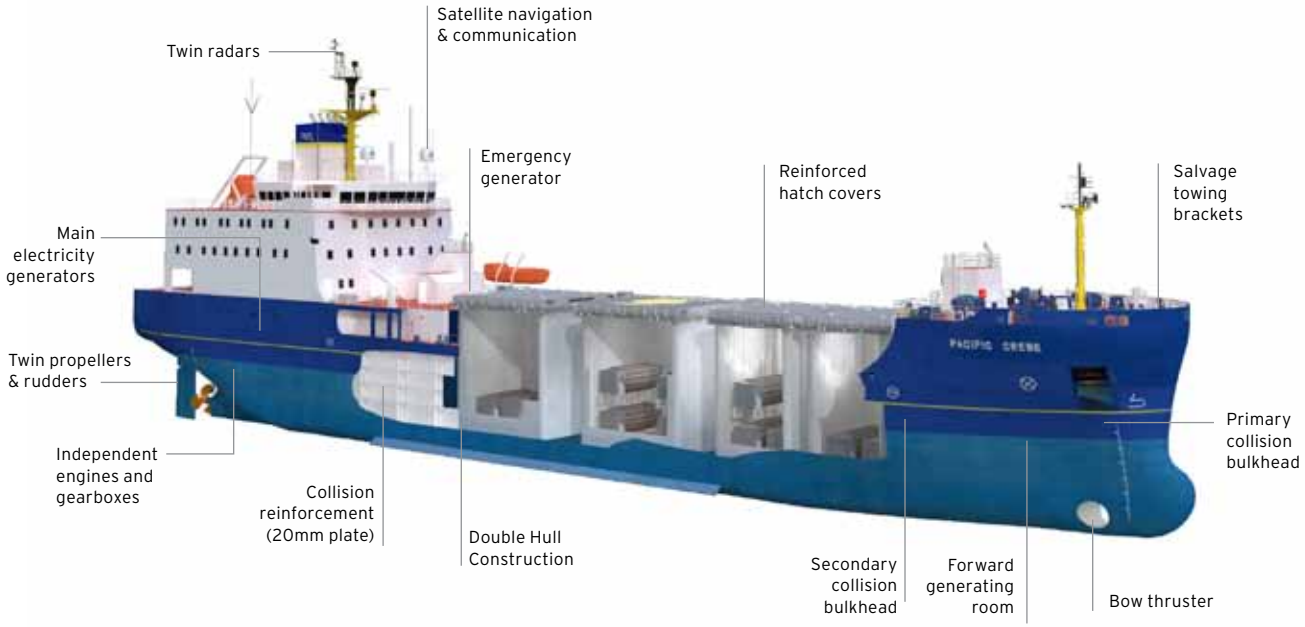
Safety in depth

The cargoes carried are protected by the transport packages containing the nuclear materials. These packages are designed and tested to international standards set by the International Atomic Energy Agency (IAEA). The design of the Pacific Heron and Pacific Egret represents a series of further barriers to protect their cargo. They have a double hull throughout and impact resistant structures between the hulls.

The vessels also have duplication and separation of all the essential systems to provide high reliability and accident survivability. This means that if any important system fails during a voyage, either due to mechanical failure or as a result of an accident, there is always a backup system ready to be brought into operation. In addition, no tanks or spaces containing oils or other pollutants are positioned directly adjacent to the outer hull to minimise the chances of pollution should the outer hull be ruptured during an incident.

In summary the key safety features are:

- double hull throughout, with additional strengthening surrounding the holds
- separate machinery and steering gear rooms
- hold cooling plant located outside holds for easier maintenance
- integrated bridge system
- no oil tanks adjacent to outer hull
- security features incorporated into design
- improved environmental and safety performance
- advanced fire detection and fire fighting systems



INF3 Vessel

In the unlikely event of an incident, a fully trained and equipped team of marine and nuclear experts is available on a 24-hour emergency standby system, in line with IAEA requirements. The ships are equipped with a specialist system to assist in their location and subsequent salvage, should the unlikely need arise.

Security

The international regulators providing guidance for the protection of nuclear material are the International Atomic Energy Agency (IAEA) and its Member States; and in the European Union, Euratom.

Prior to each MOX shipment, a transport plan is prepared documenting the specific arrangements to be implemented for the shipment to ensure, among other things, adequate physical protection of the cargo to be transported. The plan is established through coordination among the industry parties concerned, the governments of Japan, the UK, France and the USA and is subject to the approval of appropriate regulators.

The specific regulations and guidelines that are met or exceeded by the design and operation of the Pacific Heron and Pacific Egret are as follows:

- NISR 2003 – UK Nuclear Industry Security Regulations
- Convention on the Physical Protection of Nuclear Material (IAEA publication INFCIRC 274)
- Recommendations on the Physical Protection of Nuclear Material published by the IAEA (INFCIRC 225)
- 1988 US-Japan Agreement for Co-operation Concerning Peaceful Uses of Nuclear Energy. This agreement elaborates in detail extensive physical protection measures to be employed for the transportation of plutonium oxide or MOX fuel by sea

In general, the security measures for MOX shipments of the sort undertaken by the Pacific Heron and Pacific Egret will fully satisfy the following requirements of the US-Japan Agreement:

- use of a dedicated transport ship
- careful selection of the route to be used
- no scheduled port call en route
- use of armed escorts aboard the transport ship that are independent of the crew
- an armed escort vessel to accompany the transport ship from departure to arrival
- measures to impede the removal of the cargo at sea
- use of multiple and secure communications systems
- monitoring of the transport ship location and cargo status by an operations centre
- preparation of a contingency plan

Crew

The vessels carry crews which are substantially larger than that found on chemical tankers of a similar size. All senior navigating and engineering officers hold certificates of competence for a higher rank than the one they serve. For example, the Chief Officer must hold a Master's Certificate. In addition all personnel are actively encouraged to enhance their skills and qualifications and to take relevant training courses.

Regulations

The vessels' design and operation meets all of the following requirements:

- United Kingdom Maritime and Coastguard Agency (MCA) regulations
- Japanese Ministry of Land, Infrastructure, Transport and Tourism (MLIT) regulations
- International Convention for the Safety of Life at Sea (SOLAS),which sets standards for the safe operation of vessels
- The International Convention for the Prevention of Pollution from Ships (MARPOL), which protects the marine environment from pollution by vessels
- IMO International Maritime Dangerous Goods (IMDG) Code applicable to radioactive materials
- INF code: International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships
- IMO International Safety Management Code (ISM Code)
- IMO International Ship and Port Facility Security Code (ISPS Code)
- The United Nations Convention on the Law of the Sea (UNCLOS), which recognises the principles of the right of innocent passage through territorial seas and the freedom of navigation beyond; and also that vessels carrying nuclear substances must carry documents and observe special precautionary measures when exercising the right of innocent passage through territorial seas

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