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INF Code

The **International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code)** became mandatory on 1 January 2001 by amendments adopted to chapter VII of SOLAS (Carriage of dangerous goods).

The INF Code sets out how the material covered by the Code should be carried, including specifications for ships.

The material covered by the code includes:

- Irradiated nuclear fuel - material containing uranium, thorium and/or plutonium isotopes which has been used to maintain a self-sustaining nuclear chain reaction.
- Plutonium - the resultant mixture of isotopes of that material extracted from irradiated nuclear fuel from reprocessing.
- High-level radioactive wastes - liquid wastes resulting from the operation of the first stage extraction system or the concentrated wastes from subsequent extraction stages, in a facility for reprocessing irradiated fuel, or solids into which such liquid wastes have been converted.

The INF code applies to all ships regardless of the date of construction and size, including cargo ships of less than 500 gross tonnage, engaged in the carriage of INF cargo.

The INF Code does not apply to warships, naval auxiliary or other ships used only on government non-commercial service, although Administrations are expected to ensure such ships are in compliance with the Code.

Specific regulations in the Code cover a number of issues, including: damage stability, fire protection, temperature control of cargo spaces, structural consideration, cargo securing arrangements, electrical supplies, radiological protection equipment and management, training and shipboard emergency plans.

Ships carrying INF cargo are assigned to one of three classes, depending on the total radioactivity of INF cargo which is carried on board, and regulations vary slightly according to the Class:

1. Class INF 1 ship - Ships which are certified to carry INF cargo with an aggregate activity less than 4,000 TBq (TeraBecquerel= measurement of radioactivity)
2. Class INF 2 ship - Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes with an aggregate activity less than 2 x 106 TBq and ships which are certified to carry plutonium with an aggregate activity less than 2 x 105 TBq.
3. Class INF 3 ship - Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes and ships which are certified to carry plutonium with no restriction of the maximum aggregate activity of the materials.

The International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on board Ships was adopted by resolution MSC.88(71) on 27 May 1999.

A recommendatory Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes in Flasks on board Ships (INF Code) was previously adopted by the eighteenth session of the Assembly on 4 November 1993 (resolution A.748(18). The 20th session of the Assembly adopted amendments to this INF Code to include specific requirements for shipboard emergency plans and notification in the event of an incident (resolution A.853(20), adopted on 27 November 1997).

*Details of the new IAEA safety standard, "Safety Fundamentals: Fundamental Safety Priniciples" published in September 2006 are available at http://www.imo.org/Safety/mainframe.asp?topic_id=1473

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