

## IUMI Policy Agenda

### 9. Nuclear Propulsion

#### *Brief description*

Focus on nuclear propulsion for commercial vessels has increased due to its potential to overcome the lack of scalable low-carbon fuel alternatives. Advanced reactor technologies have significantly improved inherent safety and production resistance compared with older generations. However, a fundamental challenge persists, which is that nuclear risks are excluded from conventional marine insurance, and neither the current maritime liability conventions nor the existing IMO framework (e.g. the Code of Safety for Nuclear Merchant Ships 1981) are designed for nuclear-powered merchant ships. Conventional insurance is generally unavailable for them. Additional concerns relate to the safety of repairs and decommissioning, and ports may restrict access to nuclear-powered vessels. The handling, disposal, and export of nuclear waste are also strictly regulated.

Commercial marine insurers also face exposure from nuclear-related risks that are unrelated to propulsion, such as the carriage of nuclear materials and the management of exclusion zones imposed by certain States. The Institute Radioactive Contamination, Chemical, Biological, Bio-Chemical and Electromagnetic Weapons Exclusion Clause (CL370) and Radioactive Contamination Exclusion Clause (RACE II) nuclear exclusions are principal in almost all marine policies, reflecting the absence of global reinsurance appetite for nuclear exposures.

In March 2024, the World Nuclear Transport Institute presented a gap analysis to the IMO Maritime Safety Committee (MSC). This analysis provides a framework for revising the Nuclear Code, incorporating a non-prescriptive, technology-neutral approach aligned with IAEA safety standards. A Correspondence Group established by the MSC recommended in March 2025 that the gap analysis serve as the basis for updating the Code of Safety for Nuclear Merchant Ships. Updates to SOLAS Chapter VIII, concerning nuclear ships, would also be required. At its 110th session in June 2025, the MSC agreed to review the Nuclear Code, which was considered outdated due to the substantial gap between current technology and existing regulations. The review is expected to adopt a goal-based, technology-neutral approach while adhering to IAEA safety standards.

Separately, a Correspondence Group formed by the Legal Committee (LEG) to examine liability frameworks for alternative fuels, recommended in January 2026 that, given the unique risks posed by nuclear fuels, LEG should consider establishing a new output on the development of a civil liability regime for incidents caused by nuclear fuels used in the propulsion and operation of commercial vessels.