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Nuclear and Other Radioactive Material Transports in the Maritime Environment: 'Evidence over Assertion' - Assuring the International Community

Question - how does the world's leading Special Nuclear Material and Radioactive Material Shipper assure its own competent authority and the international community that it can safely and securely transport every conceivable cargo on the Radioactive Material spectrum? Answer - through employment of rigorous and robust internal and external assurance programmes.

International Nuclear Service (INS), part of the United Kingdom's Nuclear Decommissioning Authority (NDA), has been doing just that for well over 40 years by road, rail and sea. Today the NDA's estate has a wealth of transport expertise including consignor/consignee knowledge, transport flask design and licensing, emergency response and radiation protection, safety, security and transport and lifting operations. In doing so, it has transported some of most sensitive nuclear materials, including plutonium and high enriched uranium, both domestically and internationally. As one can imagine, transports of this nature are essential and act as a critical enabler to the nuclear sector and its fuel cycle.

Integral key stakeholders and indeed the target audience during this process include the Coastal and Shipping States community, international governments and competent authorities, as well as the wider international community, for example non-governmental organisations (NGOs) and not least the general public through utilisation of, amongst other media, corporate communications. Not forgetting that clear and concise underpinning legislative and regulatory frameworks are pivotal in directing and informing a proportionate yet effective safety and security provision.

Radioactive Material is a 'broad church'governed by different areas of legislation. Regarding nuclear material, the CPPNM entered into force on 8 February 1987 which, inter alia, established physical protection measures that had to be applied to nuclear material in international transport. Thereafter in 2005 the Parties to the Convention achieved consensus for an Amendment, which entered into force on 8 May 2016. The Convention and the Amendment form the single legally binding international instruments in the area of physical protection of nuclear material.

The key point therein pertains to what were previously considered obligations for physical protection under the CPPNM, however, post entering into force are now legally binding for States Parties in order to protect nuclear material during transport but NM is only one part of the conundrum.

For what is termed Other Radioactive Material (ORM), from a shipping perspective, governance is achieved via employment of a number of documents, including the IAEA Code of Conduct on the Safety and Security of Radioactive Sources (the 'Code') and the UNECE Orange book (UN Recommendations on the Transport of Dangerous Goods Model Regulations). Furthermore, the IAEA SSR-6 Transport Regulations (outlining guidance on the safe transport of radioactive material) aids formation of the basis of international modal regulations established by other United Nations bodies, such as the International Maritime Organisation's, namely, the International Maritime Dangerous Goods (IMDG) code which is holistically fused to provide optimal safety and security standards in the transportation of everything from vitrified high level waste reprocessing returns to spent fuel and radioactive sources.

At the high end of the continuum, and in order to deliver safe and secure Category I nuclear material maritime transports International Nuclear Services (INS), in conjunction with its strategic partner the Civil Nuclear Constabulary (CNC), Her Majesty's Royal Navy, and with the agreement and approval of the United Kingdom's Office for Nuclear Regulation (ONR), has developed a rigorous and robust quality assurance and operational capability check to ensure both internal and external expectations are met in terms of understanding, timeliness, completeness, and value. This INS bespoke Maritime Integration Training and Demonstration (MIT/MID) programme has been designed specifically to counter the threat posed from maritime and nuclear sector threat actors and vectors and has been successfully employed in advance of numerous live international and national security operations.

In tandem and symbiotic to this, contingency in the form of Emergency Preparedness and Resilience (EP&R) functionality is similarly exercised and scrutinised with a view to delivering a testing and pressurised environment not only at the operational and tactical levels but on the 'government to government'communications level via, principally, the Coastal and Shipping States forum and through international exercises conducted at the IAEA's Incident emergency Centre in Vienna.

In summary, this paper will elucidate further in support of the above assertions providing detailed evidence on how credible assurance is designed, delivered and audited with a view to overcoming the challenges presented by an ever more dynamic and evolving threat environment and in doing so inform the reader on how the global leader in this area engenders confidence in its professional capabilities.

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