Northern cyprus battery safety

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The co-ordinated approach being pursued through the OECD aims to boost pro-active actions by businesses to promote good practices on button battery safety, in particular with respect to warnings, packaging and product design. The OECD is taking the lead in co-ordinating International Awareness Week on Button Batteries.

Discover the key codes and standards governing battery safety and compliance in building and fire regulations. Learn about the various battery applications, types, and chemistries, along with safety guidelines and model codes ensuring safe battery usage.

Our analysis of safety developments for energy storage and batteries. Guest host Sylvia Leyva Martinez, Principal Analyst at Wood Mackenzie, joins the show to explore the challenges and solutions to lithium-ion battery safety.

In the past few months, Gard has received several queries on the safe carriage of battery energy storage systems (BESS) on ships. In this insight, we highlight some of the key risks, regulatory requirements, and recommendations for shipping such cargo.

According to the International Energy Agency, energy storage systems (ESS) will play a key role in the transition to clean energy. Sometimes referred to as "energy storage cabinets" or "megapacks", ESS consist of groups of devices that are assembled together as one unit and that can store large amounts of energy.

Battery energy storage systems (BESS) are the most common type of ESS where batteries are pre-assembled into several modules. BESS come in various sizes depending on their application and their usage is expected to rise considerably in coming years. Although different kinds of batteries can be used in BESS, lithium-ion batteries seem to be the most popular. Our focus in this article is therefore on energy storage systems equipped with lithium-ion batteries.

Declaration of BESSBESS with lithium-ion batteries is classed as a dangerous cargo, subject to the provisions of the IMDG Code. In the IMDG Code, there are multiple descriptions and shipping names for lithium cells and batteries, depending on their chemistry and whether they are stand-alone, within equipment, contained within vehicles or cargo transport units. This has caused some confusion among shippers about how to correctly declare this cargo. We have come across instances where a BESS is declared as either:

o UN 3480 (Lithium-ion batteries), oro UN 3481 (Lithium-ion batteries contained in equipment or lithium-ion batteries packed with equipment), oro UN 3536 (Lithium batteries installed in cargo transport unit).

Carriers should also be aware of the applicability of the different special provisions (SP) of the IMDG Code. SP 389 (which mentions the securing of batteries to the interior structure of the cargo transport unit) is

applicable only to UN 3536. Similarly, a lot of other SPs which are applicable to UN 3480 and UN 3481 do not apply to UN 3536. There are some changes proposed to UN 3536. For more details on this, see below in the section "stowage and securing".

There have been instances on shore where BESS have had a thermal runaway incident and subsequent explosion, like the 2019 incident in Arizona. In an attempt to deal with such fires, the container doors have been opened to gain access, which has resulted in explosions and in some cases significant injuries. Some BESS with inbuilt detection systems will activate an auto-release firefighting agent. However, a challenge with such systems is how they can be connected to the ship"s system so that the crew will know which container is of concern.

A combination of measures may be required to contain or bring a lithium-ion battery fire under control. These include improved automatic fire detection alarm systems, CCTV and thermal imaging equipment for cargo spaces to enable earlier detection, appropriate and upgraded personal protective equipment (PPE), and provisions for the use of copious amounts of water.

Lithium-ion batteries may also continue to generate a lot of heat after the fire has been extinguished and are at risk of re-ignition. A decision to fight the fire manually should only be made when it is deemed safe for the crew. Owners are advised to assess the suitability of existing fire detection and firefighting equipment onboard their vessels for lithium-ion battery fires. Crew should also receive training in how to respond to lithium-ion battery fires.