



October 17, 2019

RE: SPBES response regarding recent fire and explosion on board ferry Ytterøyningen

Dear Sir/Madam,

As a leading Battery System provider to the Marine industry, SPBES has been asked to provide a response in regard to the recent fire and explosion in the battery compartment of the ferry Ytterøyningen.

Battery system safety is the primary concern in any system design. SPBES has designed several layers of safety into our system to ensure that there is reduced risk of a similar event occurring with one of our systems. The primary safety feature is our closed loop water cooling system (CellCool™) that is independent of the operation of the battery. This means that in the case where an individual battery unit, or indeed even a full string(s) is offline, the cooling system stays in operation whether or not the batteries are connected. In addition, we have run extensive destructive testing in our lab where we caused cells to fail inside our battery, and successfully stopped the resulting thermal event without experiencing any sort of thermal runaway. All gases were vented properly and safely through our ducting system and the adjacent cells were maintained at safe temperatures.

SPBES normal operating procedure is that when an individual string is not connected, the cooling system runs continuously, but the string control unit (called an MBU) does not communicate to the ships control system until the string functionality is restored. As an added measure, we are amending our procedures to maintain communication between the MBU and the customer interface when a disabled string is not in operation. This procedure can be implemented immediately, but may in some cases require manual installation of a software update by SPBES in coordination with our customers. We are currently assessing the effort to implement this feature in our system as a standard procedure and expect to have a plan for that by the end of October.

Please do not hesitate to contact us directly if you have any concerns or questions.

Sincerely,

for
Brent Perry
CEO

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