

FirePro.

Kokam Co.

Location: **Asia** Distributor: **FirePro Korea** Application: **Energy Storage Systems, High Voltage Rooms** Industry: **Renewable Energy**



Kokam Co. is a global leader in the design and manufacturing of rechargeable battery solutions. It currently holds over 150 patent listings and it was the first company to develop high capacity lithium-ion polymer batteries worldwide. With the rise of grid-connected renewable energy sources, Kokam's Energy Storage Systems have been recognized as the most effective solution.

The Task

Design, supply, install and maintain tailor-made fire detection and suppression systems for the high voltage energy storage Power Conversion Systems (PCS) and Energy Storage Systems (ESS). PCS are electric power conversion systems located inside 40-foot mobile containers which can convert and/or distribute the surplus from similar size Energy Storage Systems (ESS) enclosures. The fire protection systems must be compact, reliable, long lasting and efficient. Most significantly, they must be able to mitigate the risks associated with the unique challenges presented by Li-ion battery fires. The extinguishing system must be designed according to both local and international standards and regulations.

FirePro Generators used:

FP-80 **FP-3000**

Risks Involved & Consequences

The demand for electricity along with the need to stabilize power grids and the efficient use of renewable energy stored in Li-ion batteries are ever increasing. Despite their many advantages, Li-ion batteries pose the main fire hazard in ESS, if subjected to electrical or mechanical abuse. In the event of a single-cell failure, the resulting thermal runaway will cause an exothermic reaction, leading to serious fires, explosions, and propagation to adjacent cells. Failure to adequately protect against fire in these situations can cause serious damage and have dire consequences.

Why FirePro?

The modularity and compactness of the FirePro fire extinguishing system were two of the decisive factors in its selection for the protection of the equipment within the 40-foot container enclosures. Also pivotal in equal measure of importance for the selection process was the ability of the FirePro system to address the complex and challenging fire risk. In the event of a Li-ion battery fire, the FirePro active agent suppresses fire, neutralizes off-gases, and controls thermal runaway propagation. Additionally, FirePro systems are environmentally friendly and require minimum maintenance over their 15-year certified lifetime.



Results & Implementation

FirePro total flooding fire suppression systems installed in both Power Conversion Systems (PCS) and Energy Storage Systems (ESS) to protect mission critical high-voltage electrical equipment offer peace of mind to operators in case of a fire emergency. With no piping required and no pressurized cylinders, the systems were easily and quickly installed to protect the at-the-cutting-edge-of- technology Kokam equipment without posing a threat to personnel or the environment. In short FirePro then, has effectively reduced operational hazards and financial losses due to down times for all stakeholders.

