

Explosion Control Compliance in BESS Design

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Abstract

Safety of lithium-ion energy storage systems requires explosion control systems to ensure failures do not result in potentially damaging deflagrations. While model fire codes stipulate requirements, compliance and reliability remain challenging gaps. This presentation will address the risks, code requirements, and common challenges in explosion system design for BESS including PNNL developed technology.

Biography

Matthew Paiss serves as a Technical Advisor in the Battery Materials & Systems group and leads their energy storage system safety efforts. Prior to joining PNNL, he was the President of Energy Response Solutions, Inc (a Training & Consultation firm). He brings 28 years of emergency response experience retiring as a Fire Captain with the San Jose CA Fire Department. His background in renewable energy started in 1982 at ARCO Solar in Camarillo, CA before studying Solar Technology and Fire Science in Santa Cruz, CA. He worked in the semiconductor industry as a field service engineer prior to transitioning to the fire service and has 15 years' experience on renewable energy Codes & Standards development. He currently represents PNNL on NFPA 855 & 418, UL 9540, 1973, 1974, & 5840. He is a national named expert on IEC TC120, and was appointed in 2023 to the Board of Trustees for the Fire Protection Research Foundation. Mr. Paiss has delivered electrical safety training to over 8,000 firefighters across North America.

