## Solarbank, Peggs Mountain BESS

*Response to AHJ Interrogatories June 24th, 2025*

**PLC Question 1**

The proposed training schedule lacks sufficient detail to determine if the training to be provided to the Burk's Falls & District Fire Department (BFDFD) will adequately ensure firefighter safety and effective incident response at this facility, per NFPA 1001, NFPA 1072, and NFPA 2800.

**Response:** Training offered to the Burk's Falls Fire Department was developed specifically for the site and proposed equipment. A detailed overview of the course material has been provided below. The course provides a comprehensive view of the site, exposures, equipment and safety features, site hazards, methods to conduct and size up and the response tactics for each potential failure scenario.

Currently NFPA 855 does not define a training curriculum. This course was developed by Chief officers in the fire services to address their stakeholder concerns, ensure firefighter safety, mitigation, and incident stabilization.

- Stationary Energy Storage System Concept
  - Explanation of battery energy storage applications coupled with different charging sources.
- Lithium-Ion Battery Storage Failures – Lessons Learned
  - A review of historical Lessons Learned is provided so the course participants can better understand modes of failure, system design and code requirements or lack thereof which may have been a contributing factor in BESS system failures.
- Site Overview
  - An overview of the site is provided that outlines the location and distance of residential exposures.
  - Outline of the general equipment arrangement
  - NFPA 1 apparatus access
- System Equipment
  - An introduction is provided for battery system components such as cells, modules, and battery cabinets along with power conversion skid components such as the inverter and transformer.

- Battery Management System (BMS)
    - The scope and capabilities of the battery management system are reviewed with course participants along with an explanation of how the autonomous operation of the system isolates trouble equipment and generates supporting alarms.

- Emergency System Shut Down (E-Stops)
    - The functional operation of the E-Stops are covered along with each layer of control exerted, interaction with the battery management system and the hazards of stranded energy.
- Detection & Suppression
    - Discussion focuses on the existing methods of detection, activation thresholds, equipment trip and notification matrix.
- Hazards
    - Chemical
        - Equipment and their supporting chemicals such as freon and transformer oil are discussed along with the hazards they pose.
    - Electrical
        - Electrical hazards are identified along with methods of detection and the process for ensuring safety while operating in an energized Class C environment.
    - Fire
        - A discussion is provided on the equipment that may reasonably fail along with examples, methods for mitigation and suppression.
    - Explosion (NFPA 68/69)
        - The potential for a deflagration event to occur is discussed along with the recommended methods to mitigate the risk though NFPA 68 or 69 controls.
    - PPE
        - Recommended PPE based on site hazards and limitations of NFPA 1971 structural firefighting gear.
- Managing Lithium-Ion Battery Fires
    - Lithium-ion battery fires behave differently from traditional fires. Recognizing key differences (such as re-ignition potential, difficulty extinguishing, and gas buildup) is crucial to developing the right response strategies.
    - Proper management includes understanding when to suppress, when to isolate, and when to let the system burn under controlled conditions.
    - Destructive cell testing is utilized to demonstrate the futility in LIB suppression operations along with the recommended tactics for managing a LIB event.
- On Arrival
    - This segment provides insight to the chief officer on actions to be taken upon arrival at a BESS emergency. This would consist of no forced entry, contacting the remote operations center to receive an initial status briefing and a list of questions that should be asked in order to understand the scope of the emergency, has incident stabilization occurred or are conditions propagation.

- Scene Size-Up
    - The scene size-up was broken down into 8 critical tasks that would allow Chief officers to make an informed decision at a Fire.
        - Community air monitoring
        - Establishing an Exclusion Zone for Firefighter Safety
        - Systems alarms
        - BMS review
        - Equipment isolation
        - Activation of explosion control system
        - Smoke showing
        - Exposure assessment
- Response Tactics
    - Hazards and response tactics are discussed for each potential failure scenario that may generate an alarm response by the fire services as outlined below:
        - Cell Venting/Fire
        - Fully Involved Battery Cabinet
        - PCS Skid Failure (Transformer / Inverter)
- Post Incident Operations
    - Determining incident stabilization and placing the event under control through use of thermal imaging methods and air monitoring for target thermal runaway gases.

**Code References:** As part of the review by PLC the following codes were referenced. We wanted to ensure that we evaluated the concerns outlined and responded accordingly. As such, we are hard pressed to clearly understand how we would be able to address firefighter safety and effective incident response through the job performance requirements of NFPA 1001 and 1072 outlined below. In addition, the reference to NFPA 2800 may not be applicable to this conversation given the fact that the standard is only applicable to sites with an occupant load greater than 500 people. The proposed facility is unstaffed.

**NFPA 1001**

NFPA 1001 consists of job performance requirements and has no relationship to firefighter safety as noted in the scope of the document outlined below in 1.1. NFPA 1001 is the standard that all firefighters within Burk's Falls must be trained too.

**1.1 Scope.**

This standard identifies the minimum job performance requirements (JPRs) for Fire Fighter I and Fire Fighter II professional qualifications.

**NFPA 1072**

NFPA 1072 consists of job performance requirements associated with HazMat/WMD. This standard also has no safety standards or requirements.

**1.1 * Scope.**

This standard identifies the minimum job performance requirements (JPRs) for personnel at the scene of a hazardous materials/weapons of mass destruction (WMD) incident at the following levels: awareness, operations, operations mission-specific, hazardous materials technician, and incident commander.

**NFPA 2800**

An Emergency Action Plan is specific to managing the risk associated with employee evacuation under fire conditions at sites with an occupant load greater than 500 people.

**1.1 * Scope.**

This standard shall establish minimum requirements for emergency action plans (EAPs) addressing all-hazard emergencies for occupied facilities with an occupant load greater than 500.

## PLC Question 2

The schedule also lacks provisions for ongoing annual refresher training, as required by NFPA 855, Section 4.3.2.2.2, which mandates periodic training to ensure responders maintain proficiency.

**Response:** Currently NFPA 855 only requires recurrent training for facility staff as outlined below in 4.3.2.2. PLC's reference was to a subsection under facility staff training. However, Solarbank is committed to offering training annually to ensure firefighter safety.

**4.3.2.2 Facility Staff Training.**

**4.3.2.2.1**

Personnel responsible for the operation, maintenance, repair, servicing, and response of the ESS shall be trained in the procedures included in the emergency operations plan in 4.3.2.1.

**4.3.2.2.2**

Refresher training shall be conducted at least annually and records of such training retained in an approved manner.