

# Emergency Egress Lighting – Why they matter

## How they work

Under normal conditions, egress lighting will be powered by the building's primary electrical supply system. When the primary power supply is interrupted for any reason, an emergency power supply must illuminate specific areas, particularly pathways that lead to exits, the exits themselves, and exit discharges. Power for the emergency egress lighting system can be provided from a number of sources. Onsite generators, building battery systems as well as individual batteries for each lighting device. Lighting and power circuits that serve anything other than required emergency loads may not be served from the emergency system. **This requirement isolates the emergency egress lighting power supply from the buildings normal electrical power system.** NFPA 101 provides a similar set of requirements. Emergency lighting is required for egress in all occupancies addressed by the code, with the exception of one and two-family dwellings and rooming houses.



## Functional Test

Testing requirements for emergency lighting appear in NFPA 101 7.9.3. Lamps and power sources must be periodically tested to verify that they continue to function in accordance with code requirements. All emergency lighting systems, regardless of their power source, must be tested monthly for a period of at least 30 seconds. For unit equipment, monthly testing typically consists of a short test of the battery and lamp, implemented by a test switch on the lighting device. For storage-battery and generator systems, testing is typically accomplished by de-energizing the electrical power source serving normal egress lighting and observing that the emergency lighting lamps illuminate. This performance test can be seen each month at all Seattle Fire Stations. Generator systems must be tested monthly by initiation at a transfer switch and run under load for at least 30 minutes (NFPA 110 8.4.2).

Emergency Egress illumination shall be provided for a minimum of 1½ hours in the event of failure of normal lighting.

## Fire Operations

A building that loses power as a result of fire or fire ground operations creates a unique energy hazard for our crews. The primary power feed for most buildings in Seattle will be 480V, 13.8Kv, or 26Kv. This electrical feed will often access the building through underground conduit entering utility spaces that are below grade. Doors labelled “Meter room, Switchgear, Chiller Room, Vault, and Transformer” are each indicators of rooms that contain extreme/lethal energy hazards. Extreme caution should be used by fire crews operating in subfloors when a building has a known loss of power. The building



may have lost power, but the primary electrical feed that is entering this utility space is likely energized. Complicating this issue is that many FAP's are co-located inside the building's electrical utility space.

**One of the most definitive indicators** that a building has lost its primary power is the illumination of emergency egress lighting throughout the building. Other indicators may include a FAP or annunciator panel that reads "AC Power Loss, or something to that effect". At night, a darkened building can be an obvious indication of power loss, but during daylight hours the energy status for the building may be less clear.



Power loss that corresponds with fire ground operations may indicate one of the following:

- Local Energy provider has de-energized the building.
- The buildings primary electrical power source has been compromised by fire, water, or fireground operations.

**What to do if the Emergency Egress Lights are illuminated during fire operations/investigation:**

- Notify the Incident Commander. This changes the energy hazard profile.
- Use caution when forcing doors below grade.
  - Do not force electrical utility doors.
- Confirm A/C power loss at the annunciator panel if this can be done safely.
- Contact Energy provider.

