NFPA 72, *National Fire Alarm and Signaling Code* (2019 edition)

29.9 Power Supplies.

29.9.1 Smoke and Heat and Carbon Monoxide Alarms.

Smoke and heat and carbon monoxide alarms shall meet the requirements of 29.8.2.1.1 and be powered by one of the following means:

1. A commercial light and power source along with a secondary power source that is capable of operating the device for at least 7 days in the normal condition, followed by 4 minutes of alarm. Carbon monoxide alarms shall have sufficient capacity to operate the alarm signal(s) for at least 12 continuous hours.
2. If a commercial light and power source is not normally available, a dependable, noncommercial ac power source along with a secondary power source that is capable of operating the device for at least 7 days in the normal condition, followed by 4 minutes of alarm for smoke and heat alarms or 12 hours of alarm for carbon monoxide alarms.
3. A nonrechargeable, nonreplaceable primary battery that meets the requirements of 29.9.2.
4. If a battery primary power supply is specifically permitted by governing laws, codes, or standards, a battery meeting the requirements of 29.9.7 or the requirements of 29.9.2.
5. A suitable spring-wound mechanism for the nonelectrical portion of a listed single-station alarm with a visible indication to show that sufficient operating power is not available.

29.9.2 Primary Power Source Nonreplaceable Primary Battery.

If smoke, heat, or carbon monoxide alarms are powered by a nonrechargeable, nonreplaceable primary battery, the battery shall be monitored to ensure the following conditions are met:

1. Single-station smoke alarm power requirements are met for at least 10 years of battery life, including required periodic testing.
2. Single-station carbon monoxide alarm power requirements are met for at least 10 years of battery life, including required periodic testing.
3. Multiple-station alarm power requirements are met for at least 7 years of battery life, including required periodic testing.
4. A distinctive audible trouble signal occurs before the battery is incapable of operating the device(s) for alarm purposes.
5. At the battery voltage at which a trouble signal is obtained, the unit is capable of producing a fire alarm signal for at least 4 minutes, or a carbon monoxide alarm signal for at least 12 continuous hours in accordance with 29.5.4, followed by not less than 7 days of trouble signal operation.
6. The audible trouble signal is produced at least once every minute for 7 consecutive days.
7. The trouble signal is allowed to be silenced for up to 12 hours.
8. A visible "power on" indicator is provided.