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**Center for Clinical Standards and Quality**

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**Ref: QSO-23-11-LSC**

**DATE:** March 31, 2023

**TO:** State Survey Agency Directors

**FROM:** Directors, Quality, Safety & Oversight Group (QSOG) and Survey & Operations Group (SOG)

**SUBJECT:** Categorical Waiver – Health Care Microgrid Systems (HCMSs)

**Memorandum Summary**

- Various CMS regulations governing certain providers and certified suppliers require compliance with the 2012 edition of the National Fire Protection Association (NFPA) Health Care Facilities Code (NFPA 99).
- 2012 edition of NFPA 99 requires emergency power for an essential electric system (EES) to be supplied by a generator or battery system.
- 2021 edition of the NFPA 99 permits emergency power for an EES to be supplied by sources other than a generator or battery system, including a health care microgrid system (HCMS)
- HCMSs are small-scale electrical grids where the sources of electricity can be provided by clean energy technologies (e.g., fuel cells, solar, wind, energy storage, etc.).
- Except as noted below, CMS is issuing a categorical waiver permitting new and existing health care facilities subject to CMS requirements to utilize alternate sources of power other than a generator set or battery system only if in accordance with the 2021 edition of the NFPA 99, 2023 edition of the National Electric Code (NFPA 70), and associated references.
- The categorical waiver excludes long-term care (LTC) facilities that provide life support as the LTC requirements at 42 CFR 483.90(c)(2) requires these facilities to have an emergency generator without exception.

**Background:**

CMS regulations require compliance with the 2012 edition of NFPA 99 for Hospitals, Critical Access Hospitals (CAH), Rural Emergency Hospitals (REH), Long-term Care (LTC), Inpatient Hospice, Ambulatory Surgical Centers (ASC), End-Stage Renal Disease (ESRD), Intermediate Care Facilities for Intellectuals with Disabilities (ICF-IID), Programs for All-Inclusive Care of the Elderly (PACE), and Religious Nonmedical Health Care Institutions (RNHCI).

Health care facilities are required to have a normal electrical power source and an alternate emergency power source provided to certain patient care rooms, equipment, and systems by an essential electric system (EES), where the loss of normal power is likely to result in injury or death. The 2012 edition of the NFPA 99 requires this emergency power source to be supplied by

a generator set or battery system. The large electrical loads and power duration required by most health care facilities traditionally demanded the use of a generator.

The 2021 edition of NFPA 99 now permits normal and emergency power to be supplied by sources other than a generator or battery system, including a health care microgrid system (HCMS). HCMSs are small-scale personalized electrical networks with intelligent controls that can operate independently, or in tandem with a large-scale electric grid. The power sources for an HCMS can be provided or supplemented by a combination of clean energy technologies such as fuel cells, solar panels, wind turbines, energy storage systems, and other alternate energy sources.

### **Discussion:**

CMS regulations allow for the waiver of specific provisions of the 2012 edition of the NFPA 99 where the application would result in unreasonable hardship upon a provider or supplier, but only if the waiver does not adversely affect the health and safety of patients or residents<sup>1</sup>.

The 2012 edition of the NFPA 99 does not permit the use of an HCMS as a power source without the concurrent use of a generator. An HCMS can be more reliable, efficient, and reduces environmental and health issues associated with generator emissions through the use of clean energy technologies. In addition to sustainability, an HCMS can provide additional redundancy and resiliency beyond the traditional use of generators. The inability to utilize an HCMS as a power source without the concurrent use of a generator would therefore be considered an unreasonable hardship upon providers and suppliers.

The 2021 edition of the NFPA 99, 2023 NFPA 70, and associated references established requirements for the installation, inspection, testing, maintenance, performance, and safe practices for HCMSs that protect the health and safety of patient and residents from associated hazards.

As the inability to utilize an HCMS without the concurrent use of a generator would result in unreasonable hardship, and because a comparable level of protection to health and safety of patients can be achieved by maintaining compliance with current edition of the NFPA codes and standards, CMS is issuing a categorical waiver to permit new and existing health care facilities subject to CMS requirements and the NFPA to utilize alternate sources of power other than a generator set or battery system so long as it is in accordance with the 2021 edition of NFPA 99, 2023 edition of NFPA 70, and associated references for the use of HCMSs.

However, there is one exception. The long-term care (LTC) requirement at 42 CFR §483.90(c)(2) specifically requires nursing homes to provide emergency electrical power with an emergency generator when life support systems are used. As this LTC regulation does not provide a waiver allowance, sources of emergency power other than a generator are not permitted for use in LTC facilities that provide life support systems for residents.

### **Categorical Waiver Process:**

Providers and suppliers which choose to utilize this categorical waiver must formally elect and document their decision. At the survey entrance conference, a provider or supplier that has elected to use the categorical waiver must provide the survey team with their documented decision and verification of compliance with all applicable requirements in the 2021 edition of

1. Hospitals (§482.41(c)(2)), CAH (§485.623(e)(2)), REH (§485.544(d)(2)), LTC (§483.70(b)(2)), Inpatient Hospice (§418.110(e)(2)), ASC (§416.44(c)(2)), ESRD (§494.60(e)(3)), ICF-IID (§483.470(j)(5)(iv)), PACE (§460.72(d)(2)), and RNHCI (§403.745(c)).

the NFPA 99, 2023 edition of the NFPA 70, and associated references. It is not acceptable for a facility to notify surveyors of the election to use a categorical waiver after the survey team has issued a citation. The survey team will review the documented decision to use the categorical waiver and confirm the facility is compliant with the applicable requirements. This will confirm that the required level of protection is provided for the health and safety of patients and residents.

If a provider or supplier has not elected to use this categorical waiver, the facility emergency power supply system will be surveyed for compliance to the 2012 edition of the NFPA 99.

If a provider or supplier has elected to use the categorical waiver for an HCMS and is in compliance with the 2021 edition of NFPA 99, 2023 edition of the NFPA70, and associated references, the facility will not be cited for non-compliance with the 2012 edition of NFPA 99 and will not be required to request a separate waiver as part of the survey plan of correction. The survey team will describe the facility-specific categorical waiver use under K900 – Health Care Facilities Code-Other and mark the facility as “The Facility Meets The Standard, Based Upon, 3. Recommended Waivers.”

If a provider or supplier has elected to use the categorical waiver for an HCMS and is not in compliance with the 2021 edition of NFPA 99, 2023 edition of the NFPA70, and associated references, the facility will be cited for non-compliance with the 2012 edition of NFPA 99. The survey team will describe the facility-specific categorical waiver use under K900 – Health Care Facilities Code-Other and cite the facility referencing applicable sections of the 2012 NFPA 99. In order for the facility to continue to use the categorical waiver for an HCMS, it will need to provide an acceptable plan of correction to reestablish compliance with the 2021 edition of NFPA 99, 2023 edition of NFPA 70, and associated references.

Please see the attachment to the memo for further information.

**Contact:**

For questions or concerns relating to this memorandum, please contact [QSOG\\_LifeSafetyCode@cms.hhs.gov](mailto:QSOG_LifeSafetyCode@cms.hhs.gov)

**Effective Date:**

Immediately. Please communicate to all appropriate staff within 30 days.

/s/

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Attachment – Health Care Microgrid System Requirements & Survey Guidance

## Health Care Microgrid System Requirements & Survey Guidance

### **Introduction:**

Health care facilities are required to have a normal electrical power source and an alternate emergency power source provided to certain patient care rooms, equipment, and systems by an essential electric system, where the loss of normal power is likely to result in injury or death. CMS currently has adopted the 2012 edition of the National Fire Protection Association (NFPA) Health Care Facilities Code (NFPA 99) which requires this emergency power source to be supplied by a generator set or battery system.

The categorical waiver issued by CMS would permit health care facilities to utilize alternate sources of power other than a generator set or battery system, including a Health Care Microgrid System (HCMS), so long as it is in accordance with the 2021 edition of NFPA 99, the 2023 edition of the National Electric Code (NFPA 70), and associated references.

The categorical waiver excludes nursing homes that provide life support as regulation 42 CFR 483.90(c)(2) requires these facilities to have an emergency generator without exception.

The requirements below are a synopsis of applicable provisions extracted from the 2021 edition of NFPA 99 and 2023 edition of NFPA 70. The specific requirements can be found under the following NFPA code references, which can be viewed for free at the NFPA online access site: <https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/List-of-Codes-and-Standards>.

### **NFPA References:**

#### 2021 NFPA 99

- 6.7 – Essential Electric System
- 6.7.1 – Sources
- 6.8 – Site Acceptance Testing
- 6.9 – Electrical Preventive Maintenance
- 6.10 – Health Care Microgrids

#### 2023 NFPA 70

- Article 517 – Health Care Facilities, Part III. Essential Electric System (EES)
- 517.30 – Sources of Power

### **NFPA Definitions:**

- “Health Care Microgrid” is defined as a group of interconnected loads and distributed energy resources within clearly defined boundaries that acts as a single controllable entity with respect to the utility. NFPA 99 (2021), 3.3.75
- “Health Care Microgrid Control System” is defined as a system including health care microgrid control functions that can manage itself, operate autonomously, and connect to and disconnect from the utility for the exchange of power and the supply of ancillary services. NFPA 99 (2021), 3.3.76

- “Qualified Person” is defined as a person who, by possession of a recognized degree, certificate, professional standing, or skill, and who, by knowledge, training, and experience, has demonstrated the ability to perform the work. NFPA 99 (2021), 3.3.155

### **NFPA Requirements:**

- Sources for power for all or part of the health care EES may be a generator set, battery system, fuel cell system, or HCMS. NFPA 99 (2021), 6.7.1.3, 6.7.1.4, 6.7.1.5, 6.7.1.6
- Power sources for all or part of the EES may be generator units, fuel cell systems, energy storage systems, and health care microgrid. NFPA 70 (2023), 517.30(B)
- HCMSs may serve individual buildings or campuses consisting of several buildings, and non-health care buildings. NFPA 99 (2021) 6.10.1.3, 6.10.1.4
- Any combination generation, storage or transformation equipment may serve as the power source for all or a portion of a HCMS. NFPA 99 (2021) 6.10.2
- HCMSs must provide effective operation in accordance with the facility’s emergency operations plan, and system components shall not be compromised by failure of normal power. NFPA 99 (2021) 6.10.3
- HCMSs connected to an external electrical utility must comply with the utility regulations. NFPA 99 (2021) 6.10.4
- HCMS control system must:
  - Be separated from other networks, and the intelligence and memory of the system shall not be dependent upon off-site sources.
  - Include manual controls for sources in case of system failure.
  - Have a dedicated 90-minute backup battery.
  - Provide a readout indicating sources that are operating and amount of power being provided by each source.

NFPA 99 (2021) 6.10.6
- HCMS commissioning must:
  - Be in accordance with a written plan that provides the means and methods necessary to verify the system, controls, and safety systems are working as designed.
    - The plan must include an overview of the specific commissioning process, roles and responsibilities, means and methods, plans and specifications, activities, documentation, checklists and testing forms, training, and identification of qualified personnel.
  - Include a commissioning report prepared by the commissioning agent.
    - The report must summarize the commissioning process, system features, final commissioning plan, result of the commissioning, as-built plans and specifications, and any identified issues and corrective actions taken.

- Recommissioning is required every 5 years, or sooner if the system configuration changes.

#### NFPA 99 (2021) 6.10.7

- HCMSs must be routinely inspected, tested, and maintained (ITM).
  - ITM must be performed by qualified individuals.
  - Inspections and maintenance for the system are required annually or in accordance with manufacturer's instructions, while components must be tested in accordance with the manufacturer's recommendations

#### NFPA 99 (2021) 6.10.8

- Site acceptance testing of electric system components and commissioning of the electric system must be performed when the system is serving spaces where the failure of normal power is likely to cause injury or death. Site acceptance testing shall be performed after initial installation and major renovations, prior to the system being placed into service. Testing procedures must be according to industry-recognized standards and practices, and records of the procedures and testing results must be maintained for 5 years. NFPA 99 (2021), 6.8
- Electrical components that are part of an electric system serving spaces where the failure of normal power is likely to cause injury or death must be part of an electrical preventive maintenance program and conducted in accordance with defined intervals. Records of all inspection, testing, and maintenance records shall be maintained for 5 years. Corrective actions must be implemented. NFPA 99 (2021), 6.9

### **Survey Process**

- At the survey entrance conference, determine if the facility has a formally-elected and documented decision to utilize the CMS categorical waiver permitting the use of alternate sources of power other than a generator set or battery system, in accordance with the 2021 NFPA 99, 2023 NFPA 70, and associated references for the use of HCMSs.
- If not, survey the emergency power supply system for compliance with the 2012 NFPA 99.
- If yes, survey the emergency power supply system for compliance with the 2021 NFPA 99, 2023 NFPA 70 and associated references.
  - Determine the electrical system arrangement, components, sources of power, and buildings/areas served.
  - Review site acceptance testing and system commissioning procedures, results, and reports to confirm the system and components were accepted and identified issues have been resolved.
  - Review electric preventive maintenance program inspection, testing, and maintenance procedures and records to confirm the system and components are being maintained and identified issues have been resolved.

- Confirm individuals managing the alternate sources of power, conducting equipment acceptance testing and system commissioning, and performing inspection, testing, and maintenance are qualified.
- If the provider or supplier follows the 2021 edition of NFPA 99, 2023 edition of the NFPA70, and associated references, the facility will not be cited for non-compliance with the 2012 edition of NFPA 99 and will not be required to request a separate waiver as part of the survey plan of correction. The survey team must describe the facility-specific categorical waiver use under K900 – Health Care Facilities Code-Other and mark the facility as “The Facility Meets The Standard, Based Upon, 3. Recommended Waivers.”
- If a provider or supplier is not in compliance with the 2021 edition of NFPA 99, 2023 edition of the NFPA70, and associated references, the facility will be cited for non-compliance with the 2012 edition of NFPA 99. The survey team will describe the facility-specific categorical waiver use under K900 – Health Care Facilities Code-Other and cite the facility referencing applicable sections of the 2012 NFPA 99. In order for the facility to continue to use the categorical waiver for an HCMS, it will need to provide an acceptable plan of correction to reestablish compliance with the 2021 edition of NFPA 99, 2023 edition of NFPA 70, and associated references.