



# DQA CODE QUESTION AND ANSWER

## Q&A 99-2 Multi-use Generators

This response is issued to provide general guidance to designers, facilities, and DQA regulators in Wisconsin. Individual situations may be considered, so contact the assigned DQA regulator. DQA reserves the right to revise any and all responses since the codes, standards, and conditions used to formulate this answer are subject to change. Nothing in this response can be construed as a waiver or variance. This response does not supersede or waive plan review authority.

### 1. Question

Under what conditions can a health care facility use an on-site electrical generator for uses other than the essential electrical system (EES), such as load shedding ?

### 2. Code Quotation

NFPA 99 (1999), 3-4.1.1.5: The generating equipment used shall be either reserved exclusively for such service or normally used for other purposes of (1) peak demand control, (2) internal voltage control, (3) load relief for the external utility, or (4) co-generation. If normally used for other purposes listed above, two or more sets shall be installed, such that the maximum actual demand likely to be produced by the connected load of the emergency system as well as [list of other loads] shall be met with the largest single generator set out-of-service.

Exception: A single generator set that operates the essential electrical system shall be permitted to be part of the system supplying the other purposes as listed above, provided any such use will not decrease the mean period between services overhauls to less than three years.

NFPA 110 (1999), 5-1.6: When primary power is available, the Emergency Power Supply (EPS) shall be permitted to serve loads other than Level 1 and Level 2 system loads, provided either: (a) A single EPS is installed and the Emergency Power Supply System (EPSS) is programmed to power only EPSS loads if the normal source fails, or (b) Multiple energy converters are installed, and upon failure of any one energy converter, the remaining energy converter shall have sufficient capacity to serve the Level 1 and Level 2 loads.

### 3. Response

1. Generators may be used for services other than EES, provided there is documented approval that addresses the following:
  - a. Complete risk assessment and analysis of operating conditions under both normal and potential abnormal situations, such as low fuel capacity, normal power is lost at any point in the electrical system, deferred maintenance, etc.
  - b. Detailed sequence of operations that addresses each potential risk of electrical interruption. Include all voltage, current, synchronization sensing means, and control outcomes.
  - c. Parallel interconnection devices, if applicable, are rated, tested, and listed for the intended purpose of switching essential electrical systems (EES).
  - d. Signed interconnection agreement between the utility, owner, and electrical design engineer. The agreement identifies the interconnection arrangement, equipment, and acknowledges minimum compliance with PSC 119.26.
  - e. Designer statement regarding compliance with the applicable electrical codes and EPA emission restrictions.
  - f. Completion Statement from an electrical authority having jurisdiction regarding electrical distribution inspection and approval (DSPS delegated municipalities or electrical inspectors).
  - g. Documents are stamped and signed by the electrical designer of record.
2. Single or multiple generators must satisfy code requirements for sizing, redundancy (multiple) and service overhauls (single). The EES must satisfy all applicable requirements of the currently adopted editions of NFPA 99, NFPA 70, NFPA 101, and NFPA 110.

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### 4. DQA Final Action

**DQA Fire Authority Approval:** David R. Soens

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