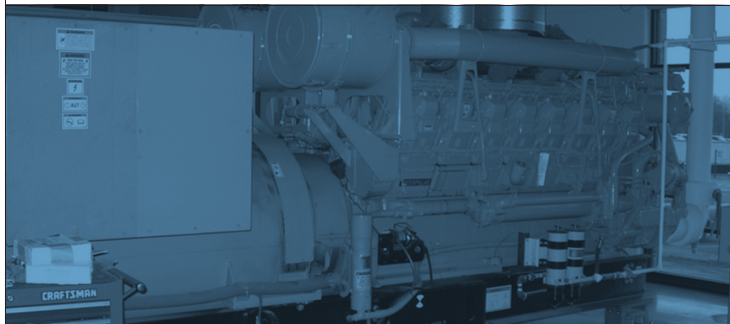




# FACT SHEET » ITM of Emergency Power Systems



Emergency and standby power systems are required to provide reliable backup to the utility and deliver electricity to critical building systems during a utility outage. Proper inspection, testing, and maintenance (ITM) are necessary for these systems to perform as intended in an emergency.

**➔ DID YOU KNOW?** According to the U.S. Energy Information Agency, nearly all electrical customers experience at least one electrical utility outage each year. On average, each outage lasts 60 minutes or more.

## The Importance of ITM

Each emergency power supply system comprises complex subsystems with many internal components, all of which are required for reliable operation. The failure of one or more of these subsystems could compromise the ability of the emergency power system to deliver electricity in an emergency. Diligent upkeep of your emergency power supply system — including routine inspections, system testing, and frequent maintenance — helps ensure that the system is always in optimum operating condition.

## The Role of NFPA 110

The installation and performance requirements of emergency power supply systems are outlined in the 2016 edition of NFPA 110, *Standard for Emergency and*

*Standby Power Systems*. This standard is invoked as a mandated code by direct reference in several major codes and standards, including NFPA 101®, NFPA 99, the NEC®, and the International Building Code. The requirements of NFPA 110 cover installation, operation, maintenance, and testing for the proper performance of the emergency power supply system.

### Routine Maintenance and Operational Testing

Chapter 8 of NFPA 110 contains the requirements for routine maintenance and operational testing, which must be based on the following:

- ▶ Manufacturer's recommendations
- ▶ Instruction manuals
- ▶ The authority having jurisdiction

In the absence of manufacturer instructions or recommendations, the following tools provided by NFPA 110 can be used for assistance:

- ▶ A suggested maintenance schedule for emergency power supply systems [Figure A.8.3.1(a)]
- ▶ A sample maintenance log for documenting routine maintenance, operation, and testing [Figure A.8.3.1(b)]

Figure A.8.3.1(a)

Figure A.8.3.1(b)



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This material contains some basic information about NFPA 110, *Standard for Emergency and Standby Power Systems*. It identifies some of the requirements in NFPA 110 as of the date of publication. This material is not the official position of any NFPA Technical Committee on any referenced topic which is represented solely by the NFPA documents on such topic in their entirety. For free access to the complete and most current version of all NFPA documents, please go to [www.nfpa.org/docinfo](http://www.nfpa.org/docinfo). The NFPA makes no warranty or guaranty of the completeness of the information in this material and disclaims liability for personal injury, property and other damages of any nature whatsoever, from the use of or reliance on this information. In using this information, you should rely on your independent judgment and, when appropriate, consult a competent professional.



## FACT SHEET » ITM of Emergency Power Systems *(continued)*

### Operational Inspection and Testing

The emergency power supply system and all its components must be inspected at least weekly and exercised under load at least monthly, as illustrated in the following table. The requirements of Section 8.4 should be consulted for more details specific to your system.

Generator set type	Run frequency	Run duration	NFPA 110 section
Diesel	Monthly	30 minutes	8.4.2
Spark-ignited (i.e., natural gas, propane, gasoline)	Monthly	30 minutes, or until the water temperature and oil pressure have stabilized	8.4.2.4

### Documentation

All inspections, tests, system exercising, repairs, and modifications must be recorded. These records must be properly maintained and made available to the authority having jurisdiction upon request.

## NFPA RESOURCES

### [nfpa.org/110](http://nfpa.org/110)

Visit NFPA 110's document information page ([www.nfpa.org/110](http://www.nfpa.org/110)) and click the Free Access link to view the entire standard. For more resources, click the Related Products link for access to the following:

#### Standards and handbooks

- ▶ NFPA 110, *Standard for Emergency and Standby Power Systems*
- ▶ NFPA 110, *Emergency and Standby Power Systems Handbook*
- ▶ NFPA 111, *Standard on Stored Electrical Energy Emergency and Standby Power Systems*

#### Training

- NFPA 110 and NFPA 111 (2016) Online Training Series, which includes:
- ▶ NFPA 110: Emergency and Standby Power Systems (2016) Online Training
  - ▶ NFPA 110: Inspection, Testing, and Maintenance of Generators (2016) Online Training
  - ▶ NFPA 111: Stored Electrical Energy Emergency and Standby Power Systems (2016) Online Training

#### Certification

- ▶ Certified Emergency Power Systems Specialist (CEPSS) Certification
- ▶ Certified Emergency Power Systems Specialist for Health Care (CEPSS-HC) Facility Managers Certification



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