1 RCNY §12-01

CHAPTER 12 EMERGENCY POWER SYSTEMS

§12-01 Emergency Power System Requirements.

(a) *Applicability*. – Pursuant to Article 11 of subchapter 6 of Chapter 1 of Title 27 of the Administrative (Building) Code, as enacted by Local Law 16 for the year 1984, these rules and regulations shall apply to emergency power systems associated with emergency fire protection equipment when required to be provided in new and existing buildings pursuant to applicable provisions of the Building Code, the Building Code Reference Standards and the Rules of the City of New York.

(1) These rules shall not apply to occupant optional sources of emergency power that provide support for sources supplying emergency power to emergency fire protection equipment only in the event of failure of the sources of emergency power.

(2) These rules shall not apply to emergency power systems installed pursuant to plans approved prior to October 1, 1984 unless construction pursuant to any such plans had not begun prior to April 1, 1986.

(3) Subdivisions (h), (n) and (o) shall not apply to required emergency power systems for which applications were filed prior to September 9, 1998.

(4) Subdivision (p) shall not apply to required emergency power systems for which applications were filed prior to the effective date of this amendment.

(b) *Definition* - As used in these rules, "emergency fire protection equipment" shall mean that equipment listed in Section 27-396.4 of the Administrative Code.

(c) *General equipment requirements.* Emergency power systems shall have a power source and fuel supply sufficient to operate the following equipment:

(1) *Fire pumps and booster pumps.* Manual, automatic special service pumps and sprinkler booster pumps.

(i) Overcurrent protection shall be provided at the emergency generator side of the power distribution system and shall be rated at least 150% of motor full load current.

(ii) Feeder conductors on the emergency generator side of the power distribution system shall be sized at least 125% of motor full load current.

(iii) Automatic transfer switches shall be located in the same room as the pumps and shall be an integral part of the pump controller.

(2) *Elevators.* Three elevators at one time, with manual transfer to all other elevators.

(i)The shaft arrangement shall permit any floor to be served by three elevators - only two of which may be in the same shaft.

(ii) It shall be possible to select from all of the elevators (with more than 25 feet travel) any combination of three cars for simultaneous operation in the emergency power mode, and to readily change this selection for firefighting or building evacuation purposes.

(iii) The selection of cars shall be accomplished manually from the elevator dispatcher's panel or from a satellite elevator panel if the main panel is not at, or adjacent to, the lobby Fire Command Station.

(iv) Interlocking shall be provided to prevent more than the intended number of cars from operating simultaneously in the emergency power mode.

(3) Alarm systems.

(4) Communication systems.

(5) Emergency lighting, if battery packs are not provided.

(6) Ventilating systems used for smoke venting or control.

(7) Stair pressurization.

(8) *Gas fired equipment*. The construction and installation of gas fired equipment shall comply with Article 16 of Subchapter 14 of Chapter 1 of Title 27 of the Administrative Code.

(9) *Fuel oil equipment.* Fuel oil equipment shall comply with Article 17 of Subchapter 14 of Chapter 1 of Title 27 of the Administrative Code

(d) *Responsibility*. The design of the emergency power system shall be the responsibility of the Licensed Professional Engineer or Registered Architect.

(e) *Engineering design*. - The emergency power systems shall be designed in accordance with generally accepted engineering practice, the Administrative (Electrical) Code and Bureau of Electrical Control Rules and Regulations.

(f) *Capacity*.

(1) The emergency generator fuel supply shall be sufficient to supply the total emergency power load for a period of at least six (6) hours.

(2) If battery packs are used for emergency lighting, they shall comply with the requirements of the Bureau of Electrical Control.

(g) *Automatic transfer switch features*.

(1) *Time delay on starting of alternate power source*. A time delay device may be provided to delay starting of the alternate source generator. The timer is intended to prevent nuisance starting of the alternate source generator with subsequent load transfer in the event of harmless momentary power dips and interruptions of the normal source. The time range must be short enough so that the generator can start and be on the line within 30 seconds of the onset of failure.

(2) *Time delay on transfer to alternate power*. An adjustable time delay device shall be provided for those transfer switches

requiring "delayed automatic" operation. The time delay shall commence when proper alternate source voltage and frequency are achieved. The delay device shall prevent transfer to the alternate power source until after expiration of the preset delay.
(3) *Time delay on retransfer to normal power*. An adjustable timer with a bypass shall be provided to delay retransfer from the alternate source of power to the normal. This timer will permit the normal source to stabilize before retransfer to the load and help to avoid unnecessary power interruptions. The bypass shall permit automatic retransfer in the event that the alternate source shall fail and the normal source is available.
(4) *Test switch*. A test switch shall be provided on each automatic transfer switch that will simulate a normal power source failure to the switch.
(5) *Indication of switch position*. Two pilot lights, properly identified, shall be provided to indicate the transfer switch position.
(6) *Manual control of switch*. A means for the safe manual operation of the automatic transfer switch shall be provided.
(7) *Nonautomatic transfer device classification*. Nonautomatic transfer devices shall be approved for emergency electrical service.
(8) *Indication of switch position*. Pilot lights, properly identified, shall be provided to indicate the switch position.

(h) *Automatic Transfer Devices and Power Generation Feeders.*

(i)*New buildings.* - (i) All automatic transfer devices, emergency generators and emergency power generation feeders that serve required emergency fire protection equipment shall not be located in the same room as the main or primary electrical service equipment.

(ii) Any automatic transfer device that is not located at the load shall be located within an enclosed room or space that has a 2-hour fire resistance rated enclosure, and that complies with the New York City Electrical Code requirements for Electrical Closets and Switchboard Rooms or Areas. The enclosed room or space shall contain no equipment or water and/or steam piping other than sprinkler piping and equipment associated with the emergency fire protection equipment. Uninterrupted conduits not associated with the emergency generation system may pass through this room or space.
(2) *Existing buildings.* - (i) Emergency power generation feeders and automatic transfer devices that are required to be installed in existing buildings pursuant to Section 27-115 or 27-118(a) of the Administrative Code shall not be located in the same room as the main or primary electrical service equipment.

(ii) Any automatic transfer device that is not located at the load shall be remotely located or separated by 2-hour fire resistance rated construction from the emergency generator and any fuel burning equipment.

(i)*Ventilating Air*. Provision shall be made to provide air adequate to replenish engine combustion and adequate for rejection of engine generated heat.

(j)*Application*. The emergency power system shall be filed with the following application: Plumbing, Mechanical Equipment and Tank Installation; Miscellaneous B Form 8.

(k) *Certificate of Electrical Inspection.* A licensed electrician shall file an application for a Certificate of Electrical Inspection with the Bureau of Electrical Control for the Emergency Power System.

(l)*Registration*. Emergency power generation equipment shall be registered with the Department of Environmental Protection, Bureau of Air Resources, in accordance with the requirements of §24-109 of the Administrative Code.

(m) *Inspection and test.* Generator sets serving Emergency Power Systems shall be inspected and tested monthly under the supervision of any of the following:
(1) A Licensed Professional Engineer or Registered Architect.
(2) An electrician licensed by the Bureau of Electrical Control.
(3) An electrician holding a Special License (Maintenance, for a specific building only) from the Bureau of Electrical Control.
(4) The Fire Safety Director having a Certificate of Fitness from the Fire Department.

The Stationary Engineer or Assistant Stationary Engineer having a Certificate of Fitness from the Fire Department.

(n) Emergency generators installed indoors in new buildings shall be located within a room or space that has a two (2) hour fire resistance rating enclosure. The room or space shall contain no equipment or water and/or steam piping other than sprinkler piping, equipment and fuel tanks associated with the emergency generation systems, and shall be located away from areas that may be prone to flooding or damage from other natural causes.
Emergency generators installed indoors in existing buildings shall be located within a room or space that has a two (2) hour fire resistance rating enclosure.
For new and existing buildings, uninterrupted conduits not associated with the emergency generation system may pass through this room or space. Emergency generators within such room or space may supply occupant optional loads in addition to those of the emergency fire protection equipment provided the emergency fire protection equipment loads are given the highest priority. Load shedding or other means acceptable to the Commissioner shall be used to ensure that this priority assignment is maintained under all operational conditions. Multiple generators supplying emergency fire protection equipment loads only, or emergency fire protection equipment in combination with occupant optional loads as a common system, may have common fuel supplies and other common equipment and systems. Generators dedicated only to supplying emergency fire protection equipment loads may have fuel supplies, other equipment and systems in common with generators dedicated to occupant optional loads. The fuel system for the operation of the emergency power system supplying the emergency fire protection equipment loads shall consist of an on-site fuel oil system providing a minimum of six hours capacity at full load at all times except during loss of utility power. Occupant optional loads shall be shed and emergency fire protection equipment shall restore to utility power, if available, to comply with this requirement. Means shall be provided for automatic transfer to the fuel oil supply upon loss of gas supply where dual fuel generators are used.

(o) Water-cooled emergency generators shall not rely solely upon a single city water connection. The additional source of water for cooling may be obtained from:

(i) another water main connection;

(ii) a suction tank;

(iii) a gravity tank; or

(iv) any other system acceptable to the commissioner.

(p) Circuits for emergency lighting in any area required to be provided with emergency lighting shall be arranged so that loss of normal or emergency power supply shall not reduce the available lighting levels in any of such areas below the level required for emergency lighting by applicable provisions of the Administrative Code, Reference standards or Rules of the City of New York. This may be accomplished by means of a combination of wiring arrangement and emergency power connection.