



NYC Department of Buildings  
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Patricia Lancaster, FAIA, Commissioner  
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## Report of Materials and Equipment Acceptance Division

Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use subject to the terms and conditions contained herein.

### MEA 193-05-E Vol. 2

**Manufacturer:** Capstone Turbine Corporation, 21211 Nordhoff St.,  
Chatworth, CA 91311

**Trade Name(s):** Capstone Microturbine Energy Systems

**Product:** Microturbine systems and fuel gas boosters

**Pertinent Code Section(s):** Reference Standards RS14, RS15 and RS16

**Prescribed Test(s):** UL 2200, UL1741, UL 508, UL 984

**Laboratory:** Underwriters Laboratories, Inc.

**Test Report(s):** Files AU2687, Project 01SC16307 issued November 15,  
2001 and revised September 27, 2006

**Description:** Capstone Microturbine Energy Systems (CMES), Models C65 and C65 ICHP for natural gas. Capstone Fuel Gas Boosters (CFGB), Models 521350 and 521455-100, which incorporates Emerson Fuel gas compressors model ZNH22C3A-TXX or model ZNH22C1A-TXX followed by 200-299, are part of the CMES located in the Gas Train. The CFGB may be mounted on the rear of the microturbine assembly.

Pursuant to "Promulgation of the Rules relating to Material and Equipment Application Procedures" dated November 5, 1992, the Bureau of Fire Prevention has no objections Letter dated May 29, 2007, F.P. Index #0612018B.

**Terms and Conditions:** The above-described units are accepted on the conditions that:

1. The installation shall comply with the applicable requirements of New York City Building Code, especially to high hazard occupancies and RS16 – Gas Piping, RS17-3, NFPA 37 “Installation and Use of Stationary Combustion Engines and Gas Turbines”, NFPA 54 “Fuel Gas Code”, and New York City Electrical Code 2004.
2. The system shall be used only with piped natural gas as the fuel.
3. The system (microturbine and gas booster) shall be installed on a roof of non-combustible construction, in the yard or on a setback subject to distance requirements. The system shall not be installed inside mercantile (occupancy group C), business (occupancy E), assembly (occupancy group F), educational (occupancy group G), institutional (occupancy group H), and residential (occupancy group J) buildings.
4. The system (microturbine and gas booster) may be installed indoors only in the following occupancy groups:
  - a) in buildings exclusively used for high hazard processes (occupancy group A)
  - b) in buildings exclusively used for storage (occupancy group B)
  - c) in buildings exclusively used for industrial use (occupancy group D)
5. The installation shall be used only for distributed generation/cogeneration of power and shall not be used in lieu of emergency power as defined in §27-396.4 Title 27 of the Administrative Code.
6. Only the Capstone models ZNH22C3A and ZNH22C1A fuel gas booster shall be used with the microturbine. In a low pressure gas pipeline, one booster shall be used for each turbine, while in a high-pressure gas pipeline; one booster shall be used for two microturbines.
7. Low-pressure gas riser piping shall comply with all applicable requirements of the New York City Building Code.
8. A manual valve and an automatic shut-off valve that closes if a leak or break is sensed in the riser/pipeline shall be installed at the base of the riser. Such leak or break shall also shut down the complete system simultaneously so that the gas boosters do not cavitate.
9. Any high-pressure gas equipment used as an accessory to the microturbine and its related gas booster shall be installed in accordance with the NYC Building Code for high hazard occupancies.

10. A flame arrestor shall be installed downstream of the gas booster to prevent flame propagating to the natural gas fuel lines. Proper allowance in the piping system design shall be made.

11. A diagram shall be posted conspicuously indicating the location of the main fuel shut-off valve.

12. Plans for the complete installation, including electrical, shall be approved by the NYC Department of Buildings and NYC Fire Department.

13. Outdoor installation shall not be located within:

- five (5) feet of any building opening, including any door, openable window or intake or exhaust vent
- fifty (50) feet of any area occupied as a multiple dwelling
- one hundred (100) feet of any area occupied for educational, health care or religious purposes, area used as a place of assembly or other area of public gathering.
- five (5) feet of any parked motor vehicle
- five (5) feet of any vent of fill line of any flammable or combustible liquid storage tank
- ten (10) feet of any combustible material
- twenty (20) feet of any flammable gas storage
- twenty (20) feet of any above-ground flammable or combustible liquid storage tank
- one hundred (100) feet of any subway entrance, exit, vent or other opening.

14. Safety features shall be incorporated, but not limited to the following:

For the Gas Booster

- Motor over current protection
- Inlet check valve to prevent reverse flow
- Low-pressure switch
- High outlet pressure switch
- High lube oil temperature switch

For the Microturbine

- Pressure transducer to monitor fuel activity
- Turbine exhaust temperature
- Air intake temperature
- Temperature sensor for the electronics
- Ambient air-pressure sensor to monitor blocked air intake
- Over speed control
- High exhaust temperature

15. All annunciators shall be provided locally and remotely, if required, to indicate any abnormal situation in the system. The panel shall be located in a continuously-supervised location on the premises.

16. The microturbine and compressors shall be shut down automatically and the fuel supply cut off automatically in case of any of the parameters monitored exceeds the safety limit.
17. A remote shut-down feature shall be installed on the premises to shut down the system remotely.
18. Doors leading to the roof where the units are located shall be alarmed.
19. The enclosure for the microturbine shall be kept in good condition over the years. Panels shall not be kept open or loose.
20. A certificate of fitness holder shall be required on the premises. The C of F holder shall be trained by the manufacturer or his authorized agent, to shut down the equipment in an emergency.
21. A New York City Fire Department permit is required.
22. According to the manufacturer's recommendations, the installation shall be inspected every 8,000 running hours and the equipment replaced every 50,000 running hours. Other equipment shall be replaced as deemed necessary.
23. The microturbine and compressors shall be provided with adequate protection from theft, tampering and unauthorized use. Additionally, when installed in locations where the possibility of vehicle impact exists, the microturbines and compressors shall be adequately protected from such vehicle impact.
24. The installation shall comply with the requirements, including testing, of all agencies having jurisdiction.
25. All shipments and deliveries of such equipment shall be provided with a metal tag, suitably placed, certifying that the equipment shipped or delivered is equivalent to that tested and acceptable for use, as provided in Section 27-131 of the New York City Building Code.

Final Acceptance June 13, 2007  
Examined By Donald [Signature]