Fire Chiefs Association of Santa Cruz County
FIRE PREVENTION OFFICERS SECTION

FIRE PREVENTION STANDARDS	DATE: **04/11/02**	NUMBER: **FP0-009**
	APPROVED:	REVISED:
	TITLE: **Residential CNG Fueling Appliances**	

INSTALLATION REQUIREMENTS FOR COMPRESSED NATURAL GAS (CNG) APPLIANCES USED FOR VEHICLE FUEL

DISCUSSION:
The appliance is used for dispensing natural gas from a gas company supply into a natural gas fueled vehicle. The required fuel dispensing delivery pressure is achieved by passing the low-pressure gas (from the gas company supply) through a 4-stage gas compressor. This appliance is for outdoor installations and non-hazardous locations only.

CONDITIONS OF APPROVAL:

- **All CNG fuel appliances require a valid building permit (mechanical and plumbing) issued by the applicable County or City Building Department, in concert with local fire authority having jurisdiction.**
- **A permit to operate may be required by the local fire authority having jurisdiction.**
- **For an installation to be approved, all of the following conditions must either be met or mitigated.**

The installation of vehicle refueling appliances are approved when the following conditions are met:

1. The appliance shall be plainly and permanently marked on a contrasting background with 1/8" minimum height letters where readily visible with the following:

   A. Manufacturer's name,
   B. Model designation,
   C. Complete electrical rating (Volt, Amperes,/Watts, Frequency),
   D. Date of manufacturer or date code,
   E. "***Warning*** *-- Disconnect power before servicing*"
   F. "***Warning--****For continued protection against risk of fire, replace with same fuse type and rating"* (Adjacent to the fuse holder),
   G. Electrical diagram,
   H. *"For installation in ventilated outdoor general purpose locations only",*
   I. Maximum and minimum operating ambient temperatures,
   J. Maximum and minimum inlet gas supply pressures,
   K. Maximum delivery (filling) pressure,
   L. Maximum capacity (flow rate),
   M. Type of gas - natural.

2. This approval does not include any remote activation or operation that will start the unit.

3. This approval does not include the calibration of the appliance or any test equipment that is used to service the unit.

4. The motor and sensor wiring that pass through the blow down vessel shall be code approved and the conductor fittings shall be capable of hermetically sealing the conductor entries.

5. All parts and components that are subjected to gas pressure shall be capable of withstanding the maximum pressure to which they will be subjected.

6. All pressure sensing and pressure relief devices shall be fixed at the factory and sealed. Field adjustable settings are not permitted.

7. All parts and components shall be of sufficient strength and durability to withstand the expected usage.

8. When replacement of fittings and connectors is required, they shall be replaced by equivalent and original parts by trained personnel or representatives of *"The Gas Company"* only. The parts shall bear the manufacturer's name.

9. Readily visible operating instructions shall be provided on the appliance describing the normal operating procedure and the emergency shut down procedure.

10. Automatic shutdown of the appliance shall immediately follow the actuation of any pressure relieving device. Means shall be provided to prevent the appliance from automatically restarting when the cause of failure us repaired. The appliance shall only be restarted manually.

11. All gas passageways, connections, fittings, and flow controls shall be approved for the intended use by an approved testing laboratory.

12. Maintenance records shall be kept by the user or the company having the responsibility of maintaining the appliance as long as it is installed or operational.

13. The compressor-motor shall be:
    A. Listed by an approved testing laboratory for the particular application;
    B. Capable of handling the maximum normal load without causing a risk of fire or electric shock;
    C. Protected against short circuit and overload current conditions in accordance with the California Electrical Code.

14. The equipment shall be installed in accordance with the manufacturer's installation instructions and the applicable provisions of the Electrical Code and Plumbing Code.

15. The equipment shall be provided with an accessible equipment grounding means, which complies with the applicable provisions of Article 250 of the Electrical Code.

16. A wiring diagram coded to the terminal markings shall be securely attached to the interior of the equipment and shall be readily accessible.

17. A component, when replaced, shall be of the identical original approved manufacturer part that was approved.

18. The installation of this equipment shall be performed by qualified personnel only. The installation of this equipment shall comply with the applicable provisions of the Building, Electrical, Mechanical, Plumbing, and Fire Codes.

19. The dispensing hose shall be listed by an approved testing laboratory and shall have a rated pressure at not less than the maximum delivery pressure.

20. The natural gas delivery pressure shall not be less than 7" w.c. (water column) and shall not exceed 2.0 psi.

21. The equipment shall be protected from vehicular damage by means of vehicular traffic barriers, approved by the department. (i.e., 4" concrete filled steel pipes, 36" below and above grade, or other approved means)

22. The equipment shall be installed on a level concrete base not less than three inches above the adjoining ground level.

23. If the equipment is no longer in service, it shall be disconnected and removed. The gas line shall be capped and the electric supply shall be disconnected and removed.

24. The fan motor shall provide minimum of four volume changes before the unit is energized.

25. Each approved appliance shall bear the approval label of the Testing Laboratory.

26. Electrical, plumbing and fire permits are required prior to installation or relocation of this equipment.

27. Approval shall be void if the product is modified without prior authorization from the manufacturer and Testing Laboratory.