Combined Heat and Power (CHP) Units – Permit by Rule 106.513 Fact Sheet

What is a CHP Unit: A collection of facilities and other equipment that generally consists of an electric generating unit (EGU) and a means of extracting energy from the exhaust of that EGU for useful purposes other than electricity generation, such as heating or cooling? A CHP unit does not include facilities for generating additional electricity after the EGU.

General Requirements

- The unit must be registered before construction starts. If the unit generates less than 20 kilowatts and is located at a residential area, registration is not required.
- Fuel must be pipeline quality natural gas. Emergency fuel consisting of propane, liquefied petroleum gas, gasoline or fuel oil can be used up to 720 hours during a 365 day period.
- The unit must continuously capture at least 20% of the total heat energy output to be used for beneficial purposes.
- Other than oxidation reduction (three ways) catalyst on rich burn engines and oxidation catalyst, add-on controls cannot be used to meet emissions requirements. This does not preclude the use of selective catalytic reduction; it just won't count towards meeting the NOx requirement.
- Individual or grouped units cannot exceed 15 megawatts of electricity unless they are sufficiently separated as noted below.

Operating Scenarios

- Emission points from units within a 200 feet radius are grouped and the combined group of units cannot exceed generating 15 megawatts.
- Multiple groups of units must be separated by 900 feet if more than 15 MW total generations is to be authorized.
- Units with a capacity of less than 20 kilowatts are not limited in number or restricted in location and do not count towards the distance restrictions above.

Emission Standards and Controls Requirements

- Any unit less than 20 kilowatts are not subject to NOx and CO emission standards or control requirements.
- Units generating 20 kilowatts to 8 megawatts
  - 1 lb of NOx per megawatt hour (MWh) and 9 lb of CO MWh
- Units generating greater than 8 megawatts
  - 0.7 lb NOx per MWh and 9 lb CO per MWh
    - Must be equipped with an oxidation catalyst control device maintaining a 70% control of VOC in exhaust stream
- The above limits are also applied to groups of units according to the Operating Scenarios section. For example, if a group of units within a 200 foot radius are over 8 MW total, then each one 20 kW or greater would have to install an oxidation catalyst.
- Heat recovery credit – for every 3.4 million Btu of heat recovered a credit of 1.0 MWh will be granted to achieve required NOx standards.

Monitoring and Testing of Internal Combustion Engine (ICE)-Based CHP

- No monitoring or testing requirements if the individual unit is generating less than 20 kW.
- For units generating 20 kW or greater the emissions shall be analyzed/tested 180 days after initial startup using a portable analyzer. The portable analyzer should be used according the manufacturer's instructions which should be made available upon request. NOx and CO emissions should be converted into units of lb/MWh.
- After initial testing, ongoing monitoring should be conducted the first and second half of each calendar year using a portable analyzer. Testing is not required if the unit did not operate more than 1000 hours in that half of the year.
- ICE and turbines operating as CHP units that are not certified to meet emissions standard listed above shall be testing with the first 90 days of startup. Testing requirements for NOx and CO shall be conducted according to the appropriate EPA reference methods, California Air Resource Board methods or equivalent methods approved by the TCEQ Executive Director.
  - Each test run shall be a minimum of 30 minutes.
  - Engine and turbine CHP units designed to generate more than 375 kW must be retested every 16,000 hours of operation, regardless of certification.
- Oxidation control devices shall be tested within 90 days of startup to verify compliance with the 70% control of VOC or an optional standard of 90% reduction of total organic compounds.

Record Keeping

- Units operating under this PBR shall keep records according to Title 30 TAC 106.8
- A weekly record demonstrating a 20% heat recovery
- Monitoring and testing data generated showing emissions standards are being met
- Maintenance Records
- Emergency fuel usage

This PBR authorizes MSS emissions which shall be represented during registration.

Remember also to account for greenhouse gases when determining if federal NSR is required.

Remember that cap and trade (MECT) applies to the following counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller. A site potential to emit of greater than 10 tons per year may require the use of allowances for the CHP unit.