

BIOMASS POWER PLANT



**Canadian
Green Energy Technology**
- CGET -



2018

This information was last revised March 2018

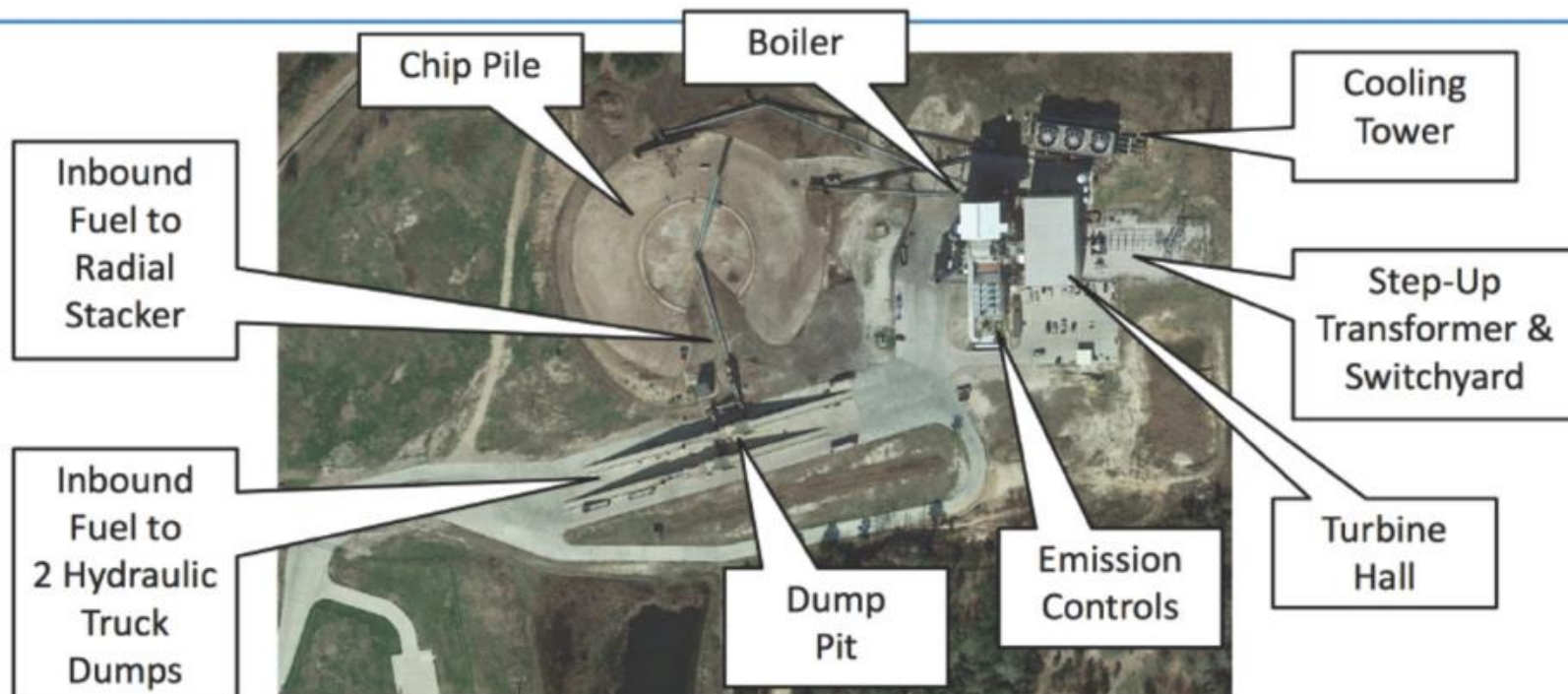
BIOMASS POWER PLANT

Intact & Fully Operational
50 MW Power Plant



Emission controls made it one of the cleanest biomass power plants

PLANT SITE



EQUIPMENT OVERVIEW

- Detroit stoker is water-cooled, vibrating grate for wood chips or other biomass including RDF and wood/biomass pellets or briquettes.
- Single pass, membrane wall 1,250 psi (8,618 kPa) boiler peak rated @ 450,000 lb/hr (204,500 kg/hr).
- Turbine generator is reconditioned GE, rebuilt prior to this installation to zero hour condition and to GE specifications. Controlled from modern control room.
- Fuel handling is dual scales with dual truck dumps, drag chains, conveyors, magnetic metal removal belts, disc screen, hopper and radial stacker.
- Substation with step-up (13.8 kV to 138 kV) transformer rated 36/48/60 MVA @ 65 C., along with other smaller transformers.
- Emission controls include SCR with ammonia injection plus ESP. Other equipment includes cooling tower, switchgear, controls, pumps, spare.

FUEL FLEXIBILITY

- Primary plant fuel was wood chips with nominal 30-50% moisture content
- Typically 1.5 short Ton (1.36 metric tonne) per MWH, improved (reduced) fuel consumption with lower moisture content feedstock <30%, which could include wood pellets and briquettes, both typically 10-12% m.c.
- Can also burn refuse derived fuel (RDF)
- Plant set up to burn natural gas and several liquid fuels including:
 - Bio-diesel
 - HFO (Heavy Fuel Oil)
 - Kerosene
- And able to burn multiple fuels simultaneously

FUEL RECEIVING & UNLOADING

1. Across weigh scales



3. Position above dump



5. Up the belt to stacker



2. Up the unload ramp



4. Hydraulic truck tipper



6. Stacker-to-Pile



FUEL STORAGE & RECLAIM

1. Typical wood chip fuel



3. Pile next to plant



5. FE Loader Retrieves ...



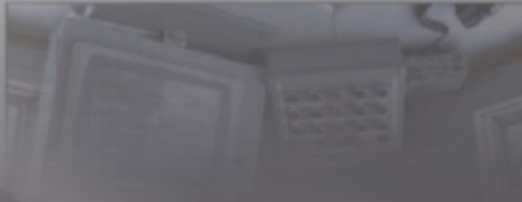
2. Rotary (FIFO) stacker



4. Woodyard control room



6. and feeds drag chain



BOILER & STEAM TURBINE

1. Woodyard to boiler



3. Fuel on stoker grate



5. Turbine and Generator



2. Turbine Hall



4. Cooling tower



6. GE Turbine



POWER & CONTROLS

1. Turbine control room



3. Step up transformer



2. Switchgear



4. Auxilliary equipment

