



32 MW BIOMASS POWER PLANT

The facility utilized the standardized 35 megawatt stoker coal fired design. The power plant was constructed in 14 months, and started commercial operation on April 13, 1986. Power was sold to utility while delivering an average 20,000 pounds per hour steam to neighboring industry.

On September 12, 2002 converted to a bio mass plant. Electric energy is delivered to the utility grid via a 40,000 kva, 13850 volts primary and 115000 secondary three phase transformer.

Steam Turbine Generator

Type: straight condensing extraction type

KW: 34715 kW

Steam conditions: inlet steam: 1500 psig/950 deg f
exhaust steam: 2.5 inches hga

Speed: 3600 RPM

Number of uncontrolled extractions: 3

Generator: 44,118 KVA, 13800 V, air cooled generator with 250 V
exciter

Boilers:

Two 215 mmBTU/hr boilers with bag filters

Each Generates 157,000 PPH steam at 1500 psig @ 950 deg f

New fuel handling system installed to operate the boiler on biomass and plant is generating rated power output.

Following average fuel BTU' used coal: 12,500 btu/lb

waste wood: 6,000 btu/lb

waste tire: 15,000 btu/lb

mixture of these three fuels are burned in boilers.

Approximate plant heat rate: 12,500 btu/kwh with steam sale,

11,800 btu/kwh without steam sale.

Auxiliary transformers 3 x 1000 kva 13850 v to 480 v

2 x 1500 kva 13850 v to 2400 v

General electric baghouses, pulse jet on & off cleaning

BAC/Pritchard cooling tower 5 cells, electric motor to gear fan
cooling.



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Allen Sherman Hoff ash removal system with 2 vacuum pumps, 4 clinker grinders, 1 bottom ash silo with dustless unloading, fly ash silo with dustless pug mill unloading.

Rosemount system 3 computerized process control.

Graver Ion Exchange Trains rated at 2x288,000 gallons per run.

Substation with Generator step-up transformer 13850 v primary to 115000 v secondary transformer, disconnect switches, metering and protection equipment

