

Dearborn, Michigan Cogeneration Plant - Cogeneration

CAPACITY: 1698 mmBTU

A Michigan Cogeneration Plant owns and operates three gas-fired boilers and three combustion turbines designated BL1100, BL2100, BL3100, GTP1, GT2100, and GT3100 at the Dearborn, Michigan cogeneration site. The turbines combust exclusively pipeline natural gas and utilize a dry low-NOx combustor to minimize NOx emissions. The turbines drive a 170 MW generator for production of electrical power. GTP1 is a simple cycle unit. GT2100 and GT3100 are combined cycle units with non-fired heat recovery.



*Not actual site. Source: Power Tec

monitoring system (PEMS) and data acquisition system under 40 CFR Part 75, Appendices C, D, E, and F.

The three boilers combust pipeline natural gas or a combination of blast furnace gas and natural gas. Each boiler is nominally rated at an output capacity of 500,000 pounds per hour of steam output. They utilize low-NOx burners to minimize the emissions of nitrogen oxides from the boilers. The boilers generate steam for use by the site and for turning a steam generator. The exhaust gas streams from all six units are discharged to the atmosphere and emissions are monitored using a statistical hybrid predictive emissions

Federal Regulations promulgated in Title IV of the Clean Air Act Amendments of 1990 are applicable to these units. These regulations specify emission limitations for particulate matter, sulfur dioxide, and nitrogen oxides. The regulations require installation, calibration, maintenance, and operation of a data acquisition system for documentation and reporting of operating data and nitrogen oxides emission rates. Additional monitoring, record keeping, and reporting of sulfur dioxide, carbon dioxide, and volumetric flow is specified through the Acid Rain Program (CAAA 1990, Title 4 - 40 CFR, Part 75) and the local operating permit (WCAPC).

Facility Information

Permit Number: MI-ROP-N6631-2004

History of Project Development:

1999

GTP1 was installed to generate electricity. Start of GTP1 generation.

2001

GTP1 demonstration ends. Submittal of the first Subpart E demonstrations for GTP1 approval.

10/24/2002

The plant petitioned the U. S. EPA for approval of a PEMS on GTP1 under Subpart E

Q4 2003

The alternative monitoring plan (AMP) was submitted.

Q4 2003

The AMP for BL1100, BL2100, and BL3100 was submitted.

Q1 2004

A minimum of 720 hours of CEMS and process data for BL1100, BL2100, and BL3100 was collected.

The QA/QC program for the PEMS was prepared and presented to the plant.

11/03/2009 – 11/13/2009

RATA testing was conducted on Boilers 1, 3, 6, and 7. The PEMS were certified on all four sources with the following serial numbers:

- Boiler 1: 1.305580.40120.32890
- Boiler 3: 3.184074.40120.31431
- Boiler 6: 6.280141.40119.60623
- Boiler 7: 7.239569.40119.60725

12/01/2009

The certification documents for Boilers 1, 3, 6, and 7 were prepared and submitted to the plant

01/11/2010 – 01/13/2010

PEMS training was conducted onsite at the plant

02/09/2010 – 02/11/2010

RATA testing was conducted on Boiler 5. The PEMS were certified with the following serial number:

- Boiler 5: 5.87466.40217.62760

03/01/2010

The certification document for Boiler 5 was prepared and submitted to the plant.

02/01/2015 – 05/15/2015

Boiler 8 started and completed certification process.

PRODUCTS:

