

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.

01/01/2004

Model deployed for GTP1 with two critical inputs and sixteen total inputs. Model deployed for GT2100 with two critical inputs and twenty-one total inputs.

01/01/2004

Model deployed for BL1100, BL2100, and BL3100 with two critical inputs and nineteen total inputs.

02/21/2005

A RATA was conducted on BL1100 for NO_x, O₂, CO, and SO₂.

02/25/2005

A RATA was conducted on GTP1 for NO_x, O₂, and CO₂. A RATA was conducted on GT2100 for NO_x, O₂, and CO.

03/15/2005

The second Subpart E demonstration was prepared and submitted for GTP1. The first subpart E demonstration was prepared and submitted for GT2100.

03/15/2005

The first Subpart E demonstration was prepared and submitted for BL1100.

2006 – 2013

A RATA was conducted on GTP1 and GTP2 for NO_x, O₂, and CO.

2006 - 2013

A RATA was conducted on BL1100, BL2100, and BL3100 for NO_x, O₂, CO, and SO₂.

PRODUCTS:

