

Flint, Michigan Auto Plant- Automotive Processing

CAPACITY: 100 kpph

An Automotive Power Plant owns and operates three boilers in the powerhouse at their 902 E. Leith Street facility in Flint, Michigan. All three boilers combust exclusively pipeline quality natural gas to generate steam that is used at the site for process and space heating purposes. All three boilers have a rated capacity of 100,000 lbs per hour steam output. The exhaust gas stream is discharged to the atmosphere from each boiler through a separate stack.

Boiler #1 and Boiler #2 are subject to New Source Performance Standards (NSPS) promulgated under U.S. 40 CFR Part 60, Subpart Db. These regulations specify emission limitations for nitrogen oxides. The regulations require installation, calibration, maintenance, and operation of an emissions monitoring system for documentation and reporting of operating data and nitrogen oxides emission rates. Emissions from these two boilers are monitored using a predictive emissions monitoring system (PEMS). 40 CFR Part 60, Subpart Db requires development and implementation of this QA plan.

A SmartCEMS®-60 predictive emissions monitoring system (PEMS) provided by CMC Solutions, L.L.C. is used as a continuous monitoring system along with a data acquisition system and reporting system provided by Environmental Systems Corporation. The SmartCEMS® PEMS collects the process and fuel flow data for the 40 CFR Part 60 regulatory reporting purposes. The system utilizes the signals from the process sensors and the results of test data contained in a historical training dataset to calculate emission rates.

DAS System: SmartCEMS® with Data elements®

History of Project Development:

04/01/2005

Plant received an NOV for excessive downtime on their CEMS. They decided to expedite their conversion to a PEMS. An alternative monitoring plan (AMP) was submitted and subsequently approved by the MDEQ.

05/15/2005

The model for Boiler 1 and 2 was deployed on May 15, 2005 with initial certification conducted on June 3, 2005. The table below summarizes the certification dates, gas flow load range and the Serial Number for each of the four certification tests.

06/01/2005

Initial testing for Boiler 1 and 2 was done at 1/2 load. CMC attached the Certification Documentation to the RATA report.

08/01/2005

The PEMS were conditionally approved.

12/01/2005

The model for Boiler 1 was updated with the addition of 742 data points. The gas flow range was expanded from 0.0 – 92.6 to 0.0 – 99.6 and then recertified on December 21, 2005 at a load range of 75-100%.

The model for Boiler 2 was updated with the addition of 1133 data points. The gas flow range was expanded from 0.0 – 91.8 to 0.0 – 99.9 and then recertified on December 21, 2005 at a load range of 75-100%.

The RATA was run at full load.

03/01/2006

The PEMS received final approval.

12/01/2006

The model for Boiler 1 was updated on December 7, 2006 with the addition of 414 data points. The model was updated as a result of a change in instrumentation and the VFD. The model was then recertified on December 8, 2006. The annual certification for Boiler 2 was conducted December 6, 2006.

The same model envelope was used.

12/01/2007

Annual certification for both Boilers was conducted on December 12, 2007. The same model was used.

07/01/2008

The QA Manual was updated.

PRODUCTS:

