

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

B264724361

FACILITY: LBWL, Eckert, Moores Park & REO Cogeneration		SRN / ID: B2647
LOCATION: 601 Island Ave, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: INGHAM
CONTACT: Angie Goodman, Environmental Compliance Specialist		ACTIVITY DATE: 02/19/2014
STAFF: Brad Myott	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Inspection and stack test observation of Turbine 2 at 100% load and Turbine1/HRSG1 at 75% and 50% load.		
RESOLVED COMPLAINTS:		

Contact Info: Angie Goodman (ame1@LBWL.com) and Mark Matus (mwm@lbwl.com)

This was a partial compliance evaluation that consisted of an inspection of FGTurb/HRSG1, FGTurb/HRSG2 and EUAuxBoiler at REO Co-Gen plant. The activity also consisted of a stack test observation of EUTurbine2 and FGTurb/HRSG1. The REO Town plant is considered part of the same stationary source as Eckert Station. This LBWL site is a major source for NOx, SOx, PM, CO (criteria pollutants) and HCl, HFI (HAPs). The source operates under the requirements contained in MI-ROP-B2647-2012.

FGTurb/HRSG1 consists of Turbine 1 and a heat recovery steam generator (HRSG) with a duct burner and electrical generator. FGTurb/HRSG2 consists of the same type of equipment. Each Turbine can operate at varying loads and can generate upwards of 40 MW depending on the ambient temperature. Ambient temperature today was 34 degrees F with cloudy skies. The HRSG's have the capability to provide additional MW output if needed. EUAuxBoiler is an auxiliary boiler that provides back up steam to downtown customers during the winter months. EUAuxBoiler is not connected to an electrical generator. All units operate on natural gas.

There were two separate stack tests being conducted on 2/19/2014. Testing was being conducted for most of the week and part of next for the aux. boiler and to satisfy the winter stack test requirement for the turbines and HRSGs at varying loads. See attached email that includes the schedule for testing which includes equipment, dates and test loads. I met with Angie Goodman and Mark Matus. We proceeded to the CEMS room and I recorded data from the turbines and aux boiler. We then went to the control room where I noted the operating load of Turbine2, and FGT/HRSG1. I also copied the steam load and verified the operating conditions were within range of the test requirements and permit conditions.

We then proceeded to the roof where I met with Tom Gasloli of TPU. Tom explained that testing was going as planned and the preliminary numbers appeared to meet the permit limits for CO. Tom G. was also on site on 2/18/14 for testing of Turb/HRSG2 at max load and Turb1 at 80% load. Tom indicated that the preliminary results passed on 2/18/14 for CO and the filters used for PM testing looked clean. Also attached is the protocol review letter from Tom Gasloli that explains the tests being conducted and the units to be tested. Below is some of the test information and data I recorded on 2/19/14.

Only EUTurbine2 of FGTurb/HRSG2 was operating on this day. EUTurbine 2 is a nominally rated 385.3 MMBtu/hr natural gas-fired turbine with electrical generator. The design capacity is 385.3 MMBTU/hr and the unit will typically operate at or below that value but on occasion during winter months the unit will reach a higher heat input. I verified the HRSG was not operating as specified for this test. EUTurbine2 was to be tested today at max load for CO and PM, PM10 and PM2.5. PM testing is only being conducted on units running at max load. CO testing is done at different loads as required in the ROP. Run 1 finished up around 11:00 a.m. Run 2 was to begin around 11:40. They were conducting 2 hr PM & CO runs on this unit. Turbine2 was operating at 43.7 MW. According to the operating curve chart, the turbine could potentially achieve 46 MW at 34F ambient temperature but on this day 43.7 MW was the max the unit could achieve. Other parameters such as how clean the turbine is can also affect the achievable operating load of the unit. Gas flow was 16,810 lbs/hr at 10:36 a.m. Angie Goodman also provided me with a print out of operational and emission data from the units being tested, see attached.

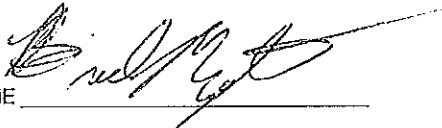
CEMS data: NOx 10.05 ppm, O2 = 14.7%. Preliminary test data: CO = 18.8 ppm

FGTurb/HRSG1 to be tested with EUTurb1 at max load and HRSG duct burner at 75% and 50% load. Testing only for gases so runs were 1 hr in length. Run 3 started at approx. 11:08 a.m. CTG1 was at 42.8 MW which again can vary based on temp and maint. of equipment. Gas flow was 16,787 lb/hr for CT1, 2,390 lb/hr for HRSG1. Steam flow 150,093 lb/hr. HRSG1 MW =3.34 MW. CEMS data: NOx = 10.77 ppm, O2 =14.12%. Preliminary test data CO = 25 ppm.

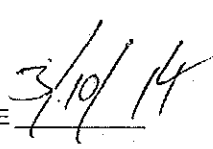
EUAUXBOILER was scheduled to be tested later in the week at max operating load for CO and PM. The aux boiler provides steam only to downtown customers such as State of MI. and GM LGR. I recorded CEMS numbers of O2 =9.9% and NOx = 9.10 ppm, which is less than the permit limit of 30 ppm. Aux boiler steamflow was 36,886 lb/hr.

It appears that after performing the inspection and reviewing the data I collected that FGTurb/HRSG1, FGTurb/HRSG2 and EUAuxBoiler at REO Town Plant are in compliance with the emission limits of MI-ROP-B2647-2012. A final stack test report will be submitted and reviewed at a later time.

NAME



DATE



SUPERVISOR

