



Industrial Energy Services Limited

Barry Cogeneration Plant

Permit: EPR/JP3632ZH

Proposal for Interim Reporting of Emissions in
accordance with IED Chapter III Annex V, Parts 3 and 4

Improvement Condition 6 (Part 2)

Required Submission Date: 31st March 2016

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Introduction

Improvement condition 6 of Environmental Permit EPR/JP3632ZH for the ENGIE Combined Heat and Power (CHP) plant at the Dow Corning Barry Silicon Based Manufacturing Installation requires the operator to submit two reports. This report is the second of these to:

“provide details of a programme to fully implement IED Chapter III Annex V reporting, reference periods and conditions and start up and shut down criteria by 30th June 2016”

Programme to fully implement IED reporting

The environmental monitoring and recording system comprises of 3 main components, the plant installed CEMS, Ovation DCS system and Envirosoft emissions system and recording/reporting software.

The Envirosoft system and associated MCERT approved software will form the main reporting platform.

Modifications to all the components that make up the system are required to meet the new reporting conditions. Below is an overview of the modifications that will be implemented to the various components. All modifications will be planned for completion by 30th June 2016.

CEMS

Removal of the Oxygen correction that takes place within the analyser (this will now be carried out within Envirosoft and DCS)

Removal of the data link from the plant to the Envirosoft Data Storage Unit (DSU)

Installation of new digital signals from the CEMS that monitor analyser status. i.e. fault and calibration in progress

Ovation DCS

Configuration of new inputs channels for the additional signals from the CEMS

Removal of all existing configuration within the DCS relating to the emissions monitoring

Configure inputs so they can be used to send the required data to the Envirosoft system via the OPC link

Configuration of digital signals within the DCS to show plant status (this will be used within the Envirosoft system via the OPC link)

Configuration of timers to monitor running conditions required for reporting

Configuration of tags to produce the figure for flue gas flow rate. This is for use in the Envirosoft system for mass emissions calculation

Configuration of input tags for the receipt of data from the Envirosoft system



Configuration of graphical displays to be used by operators for plant emissions monitoring

Configuration of trends and data historian for the recording of required data

Configuration of alarms at various set points to aid the operator in the safe and compliant operation of the plant

Configuration of logic signals for establishing the 'operating', 'start up achieved' and 'shut down' criteria (details of the descriptive logic in appendix 1)

Envirosoft System

The DSU is to be installed in a new location.

A new Ethernet switch will be installed to connect the various data sources

A master/backup DSU system is to be used which will collect all the required plant data

The data will be processed within the Envirosoft software packages installed on a control room desktop PC.

The software will produce the required signals used by the operators for running the plant. (this can be displayed on the PC screen but will also be repeated to the DCS.)

The software will allow the reporting against the required report templates (some data will also be required from the DCS to be manually entered into the template ie running hours)



Appendix 1

Emission Point A2, FB-001

'In operation'

This will be derived from DCS logic confirming that (the boiler has a flame established) and (the relevant fuel valves are open). This will be defined as the 'start-up period'

'Startup complete' MSUL

This will be derived when the following conditions are satisfied:-

(Boiler 'in operation') and (control mode out of 'start-up' and in a pressure or flow control mode) and (boiler steam outlet valve open and start-up vent closed) and (steam flow greater than 25te/hr)

'Min load shut down' MSDL

This will be derived when the boiler is 'in operation' and the above 'start-up complete' is not satisfied

Emission Point A1 and A2 HR-001A and HR-001B

'In operation'

This will be derived from DCS logic confirming that:-

((the boiler has a flame established) and (the relevant fuel valves are open)) or (GT is running >95% speed). This will be defined as the 'start-up period'

'Start-up complete' MSUL

This will be derived when the following conditions are satisfied:-

((Boiler 'in operation') and (control mode out of 'startup' and in a pressure or flow control mode) and (boiler steam outlet valve open and startup vent closed) and (steam flow greater than 32te/hr)) or ((GT is running >95% speed and generator breaker closed) and (by-pass damper is open to boiler) and (boiler steam outlet valve open and startup vent closed))

'Min load shut down' MSDL

This will be derived when the boiler is 'in operation' and the above 'start-up complete' is not satisfied

