

Annex J

Investigation Report

Investigation Report of CEMS Exceedances

Date	1 – 30 April 2019
Time	Continuous Monitoring throughout April 2019
Monitoring Location	Continuous Environmental Monitoring System (CEMS)
Parameter	Various emission parameters of the Centralised Air Pollution Control System (CAPCS), Cogeneration Units (CHP) and Ammonia Stripping Plan (ASP)
Exceedance Description	<p>1. Continuous monitoring was carried out for CAPCS, CHP and ASP throughout the reporting period using the CEMS. According to the EM&A Manual, exceedance is considered if the emission concentration of the concerned pollutants is higher than the emission limits stated in Tables 2.2, 2.3 and 2.5 of the EM&A Manual (Version E) for CAPCS, CHP and ASP respectively. The concentration of the concerned air pollutants were monitored on-line by the CEMS. Exceedances of various emission parameters were recorded on the CEMS including:</p> <ul style="list-style-type: none"> • Odour in the CAPCS; • NO_x and SO₂ in the CHP; and • CO, NO_x, SO₂, VOCs and NH₃ in the ASP. <p>The detail monitoring results are shown in <i>Annex G</i> of the EM&A Report.</p> <p>2. According to the Contractor, the plant was receiving around 100 tonnes of SSOW daily and was operated normally.</p> <p>3. The exceedances of odour in CAPCS was due to problems in the chemical dosing system resulting in high concentrations of odorous gases H₂S and NH₃ in the exhaust air.</p> <p>4. CHP setting was undergoing fine-tuning for performance optimisation which leads to the ineffective removal of NO_x at a certain period of time.</p> <p>5. According to the Contractor, the SO₂ exceedances recorded in the CHP could be due to the tripping of the desulphurisation column resulting in the incomplete desulphurisation of biogas in previous process.</p> <p>6. The Contractor explained that the exceedances recorded in CO, NO_x, SO₂, VOCs and NH₃ in the ASP was because the thermal combustion unit of the ASP still require tuning to optimise the combustion efficiency. In addition, the Contractor reported that the tuning of the thermal combustion unit took longer than anticipated resulting in the many exceedances recorded during the reporting period.</p>
Action Taken / Action to be Taken	<ul style="list-style-type: none"> • Once it was identified that there was a problem with the chemical dosing system, the Contractor added the

	<p>chemicals to the system manually to minimise the exceedances. The Contractor has also contacted the supplier of the chemical dosing system to carry out repairing works so that the system can function properly.</p> <ul style="list-style-type: none"> • Continuous optimisation of CHP and re-adjustment of NO_x control for CHP has been carried out. • Continuous monitoring and routine maintenance of the desulphurisation column to reduce the duration of desulphurisation column tripping. • Tuning of the thermal combustion unit was carried out to optimise the combustion efficiency in order to remove the pollutants in the biogas.
<p>Remedial Works and Follow-up Actions</p>	<p>The Contractor is recommended to closely monitor the processes, including the chemical dosing system in the CAPCS, the desulphurisation process, and combustion of biogas in the ASP to avoid the reoccurrence of similar problems. MT will carry out follow-up audit regarding the progress next month.</p>

Prepared by: Bonia Leung, MT Representative
 Date 14 May 2019