

Annex F

Investigation Report

Investigation Report of CEMS Exceedances

Date	1 - 30 April 2022
Time	Continuous monitoring throughout April 2022
Monitoring Location	Continuous Environmental Monitoring System (CEMS)
Parameter	Various emission parameters of the Cogeneration Units (CHP) and the Ammonia Stripping Plant (ASP)
Exceedance Description	<p>1. Continuous monitoring was carried out at the 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 F) 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"> • SO₂ in CHP 1 and 2 • NO_x in CHP 3 • CO, NO_x, SO₂, VOCs and NH₃ in the ASP <p>2. The Contractor has investigated the cause of the exceedance and identified that</p> <ul style="list-style-type: none"> • The exceedances of SO₂ from CHP 1, 2 and ASP occurred due to tripping of a blower in the de-sulphurisation system, affecting air supply to the system. • The exceedances of NO_x occurred due to unstable system caused by leakage within the CHP 3. • Other exceedances from ASP occurred due to system instability caused by motor overheating, unstable water flow and leakage of the ASP feed pump.
Action Taken / Action to be Taken	<p>For the SO₂ exceedance, the Contractor arranged immediate maintenance work for the air blower and cleaned its filter when the issue was identified. The air blower was fixed on the same day.</p> <p>For the NO_x exceedance, the Contractor has temporarily fixed the leakage upon identification of the cause of exceedances. The Contractor will continue to monitor the situation.</p> <p>For the other exceedances from the ASP, the Contractor has reinstalled the ASP feed pump on 29 March 2022 but were unable to completely resolve the leakage. The Contractor is pending the required parts for maintenance.</p>
Remedial Works and Follow-up Actions	<p>The Contractor will continue to monitor the leakage within CHP3 and will resolve the leakage in the ASP as soon as the parts required for maintenance are available.</p> <p>The Contractor is recommended to closely monitor the processes, including the modification works and follow-up emission monitoring of the ASP to avoid exceedance.</p>

	The Contractor should review the routine inspection and maintenance schedule of the ASP and conduct preventative maintenance to avoid similar re-occurrence of the equipment failure.
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Prepared by: Angela Yung, MT Representative

Date 14 May 2022