

ATTACHMENT F
EMISSIONS EQUIPMENT MALFUNCTION PLAN

New Covert Generating Company, LLC Covert Generating Facility			
Number: OPS-901 <i>(Formerly CGC 6.3.1)</i>		Subject: Emissions Equipment Malfunction Plan	
Approved by: cHead	Current Issue: Revision 4	Issue Date: April 10, 2013	Last Review Date: August 22, 2017
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RECORD OF CHANGES

Rev	Date	Description of Changes
0	1/31/03	Original Document
1	6/2/03	Section 3A, 3B, 3C Defined "normal conditions" and practices used to assess "said condition." Section 3D referenced core sampling as per CGC 6.3.3.
2	8/4/03	Section 3D, changed to include CMCO. <i>(Note: Approved by MDEQ on 8/19/03.)</i>
3	4/10/13	Update to new procedure format. Revised responsibilities section to be consistent with plant organizational title changes. Corrected editorials and verified consistent with current plant operations. (Note that in 2005, revisions were generated out of sequence to earlier versions that were not approved by the DEQ. This resulted in duplicate revision numbers with different information contained in them. The 2005 version was identified to have been to "responsibilities" only and these changes were appropriately incorporated into this revision.)
4	1/26/15	Update to reflect approved change requirements for Start-Up and Minimum Load
5	8/22/2017	Remove NAES

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1.0 PURPOSE

This manual describe procedures for addressing the malfunction of emissions reduction equipment at the Covert Generating Facility.

2.0 REFERENCES

2.1 SCR & CMCO Operations & Maintenance Manual, OPS-903 *(formerly CGC 6.3.3)*

2.2 Emissions Reduction Plan Manual, OPS-902 *(formerly CGC 6.3.2)*

2.3 Unit Start Up / Shutdown, OPS-616

3.0 SCOPE

This procedure is applicable to the Selective Catalytic Reduction (SCR) and Carbon Monoxide Catalytic Oxidation (CMCO) modules and the associated emissions reduction equipment at the Covert Generating Facility.

4.0 RESPONSIBILITIES

4.1 The Plant Manager is responsible for procedure approval and implementation.

4.2 The Operations Manager has the responsibility of ensuring that this procedure is fully utilized and followed by appropriate employees of Covert Generating Facility. Additionally, the Operations Manager is responsible for ensuring that proper notifications are made to the State & relevant authorities in accordance with air permit directions AND for reporting any variances related to the malfunction of emissions reduction equipment to the proper authorities.

4.3 The Control Room Operator (CRO) will be responsible for monitoring all emissions reduction equipment for proper operation and shall proactively implement the guidelines of this plan.

4.4 The Operations & Maintenance Technician(s) (OMT) will be responsible for completing all field operations under the direction of the CRO. This includes, but is not limited to proper valve alignment, equipment monitoring and routine system maintenance.

5.0 OPERATIONS GUIDELINES

NOTE: In all cases described below, it is expected that the Operations Manager and Plant Manager will be notified of the observations regarding the emissions system and the recommended course of action for the specific Unit. Based on our history, certain instances of emissions system malfunctions are limited in duration and as such, remaining at power (min load of 60%) can result in fewer emissions than if the Unit shuts down and restarts. Such direction should be solicited from the Operations and / or Plant Manager based on their discussion with the appropriate authorities and their documented receipt of concurrence for such direction. **This direction SHALL be logged in the CRO Logbook.**

- 5.1. Runback: A "runback" is the term for automatic load reduction of a Unit in response to a malfunction of ancillary equipment or in response to specifically monitored Gas Turbine parameters (CPFM, Fuel Pressure, Exhaust Pressure, etc.). Such Unit load reductions range from 25% to 75% of the Unit's full load and may affect one or all Units. The CRO shall promptly determine the recovery time required to restore the Unit(s) emissions parameters to normal operating conditions. This is defined as stable operation of the Gas Turbine above 60% load AND emissions parameters within acceptable ranges per our air permit. This is accomplished by monitoring all related parameters, trends, and alarms, including catalyst inlet and outlet NO_x, and NH₃ flow. If for any reason, the Unit(s) cannot remain in compliance with the air permit, the CRO shall initiate a normal shutdown of the Gas Turbine. The CRO shall not initiate the restart of the Unit(s) until all systems have been restored to normal conditions.
- 5.2. Trip: A "trip" is the term for automatic shutdown of the Unit (or ancillary equipment) due to the activation of a protective interlock device. For ancillary equipment, the CRO shall determine the recovery time required to restore the equipment to a normal condition, and take appropriate actions including, but not limited to, the shutdown of the Unit. A "Unit Trip" is the immediate shutdown of the Gas Turbine, which may be initiated manually or by protective interlock devices. Following a Unit Trip, the CRO shall not initiate a Unit restart until all systems have been restored to normal conditions.
- 5.3. CEMS Malfunction: For any CEMS (Continuous Emissions Monitoring System) malfunction (any mode causing invalid data from the CEMS), the CRO shall monitor related parameters and emission control devices and ensure that normal operation is documented / recorded. If there is a significant and abnormal change in any of the parameters, the CRO shall initiate a normal shutdown of the affected Gas Turbine. The CRO shall not initiate Unit restart until all systems have been restored to normal operating conditions.

- 5.4. Catalyst Malfunction: SCR (Selective Catalytic Reduction) or CMCO (Carbon Monoxide Catalytic Oxidation) component malfunction is identified by a gradual decrease in catalyst performance. Per normal industry standards, this is a subtle change occurring over several years and thousands of operating hours. Trend analysis of SCR parameters will be used to track the catalyst performance. The CMCO and SCR performance is monitored during daily operation and by way of regular inspection intervals of "coupons" within each catalyst module. Sampling of the CMCO and SCR modules is performed in accordance with the direction given in Reference 2.1, SCR & CMCO Operations & Maintenance Manual, OPS-903.
- 5.5. Controls Tuning: "Tuning" is the periodic adjustment of control devices to maintain their performance. All tuning shall be conducted in a manner that will not result in any emissions exceedances, and must be approved by the CRO prior to commencement.
- 5.6. Operations Anomalies: Operating anomalies that would cause the Unit(s) to not operate within air permit limits shall be addressed immediately upon discovery. The CRO and plant management shall assess the situation and initiate corrective actions as necessary. These actions may include the shutdown of any or all Units until the anomaly has been resolved.
- 5.7. Startup Mode: "Startup Mode" is considered to be the power level below which the Gas Turbine(s) emissions are not subject to normal operation air permit limits. For the Covert Generating Facility Turbines, this value is 60% of Gas Turbine load. Below 60% Gas Turbine Load is considered to be "Startup Mode." Although emissions control devices should be in service during this mode, total actual emissions may be higher than normal or even exceed the "normal operation" air permit levels. Therefore, operation in "Startup Mode" should be minimized except as necessary to start the Unit(s) and/or to conduct trouble-shooting of power plant components that can only be performed in this power range. In no case shall the plant be operated in "Startup Mode" for the sole purpose of generating electricity with emissions equipment performing in a compromised state.