CDM Monitoring Procedure
&
Management Structure
for

CDM Project Reference No. 0348

Cogeneration system based on biomass (rice-husk) replacing oil fired boiler for process steam and generating power for partly replacement of grid power supply to the plant at M/s Indian Acrylics Ltd., District Sangarur, Punjab, India.

Objective:

To calculate Certified Emission Reductions (CERs) for the project activity by Indian Acrylics Limited systematically, transparently, accurately. This would help in the verification process.

Description:

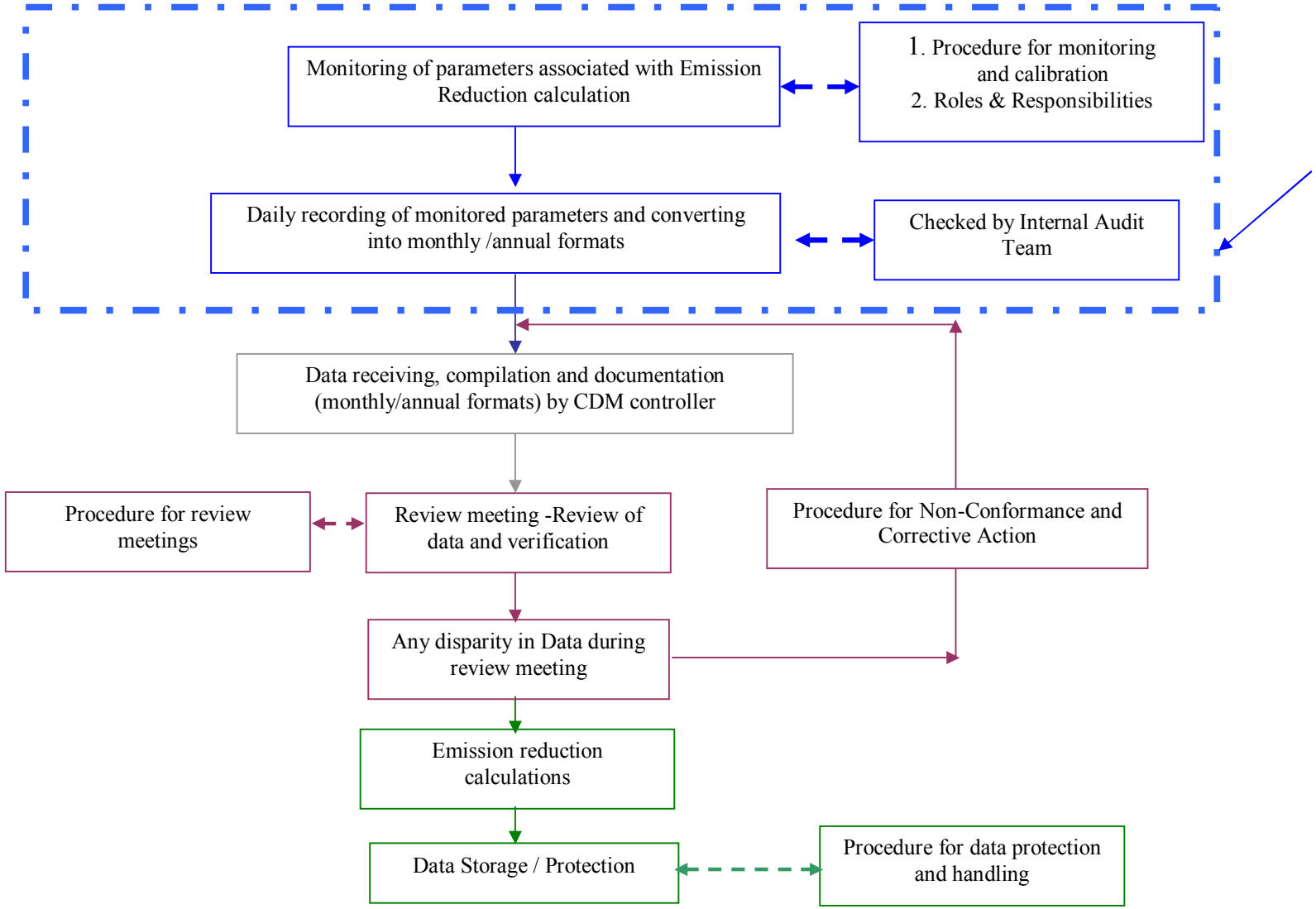
The CDM monitoring document primarily consists of following details:

- Procedure for monitoring of various parameters associated with GHG emission reduction and the department in charge of CDM and persons responsible for the data.
- The frequency of monitoring the parameter, the recording procedures adopted and the frequency of calibration of the instrument.
- Procedure for recording the observations, compiling the reports on the basis of it.
- Quality assurance / Quality control plan being adopted in the monitoring procedure.
- Procedure for calibration of instruments and measurement equipments.

General Procedures to be followed for data management:

- ✓ The data and documents related to CDM project which are forwarded by the respective departments to department incharge of CDM should be duly signed by respective CDM team member of the respective department. The data and documents related to CDM project will be retained by respective department till 2 years after the end of crediting period. The descriptive flow chart for the monitoring, recording and storage is as given below:

Flow Chart for CDM Data Monitoring, Recording and Storage



Parameters monitored

Parameter	Unit	Instrument used	Recording frequency	Calibration frequency
Steam generated from the boilers (S_B)	ton	flow meter	daily	The instruments are calibrated regularly as per the manufacturer's specification.
Steam supplied to TG (T_S)	ton	flow meter	daily	The regular calibration of the measuring instrument (flow meter) is done to ensure the accuracy of the results.
Steam supplied to PRDS (P_S)	ton	flow meter	daily	The instruments are calibrated regularly as per the manufacturer's specification.
Steam supplied to Super heater (S_S)	ton	flow meter	daily	The instruments are calibrated regularly as per the manufacturer's specification.
Auxiliary energy consumption (P_A)	ton	energy meter	daily	The instruments are calibrated regularly as per the manufacturer's specification.

Biomass consumption (H_{CO})	ton	The rice husk is procured from the traders through trucks, which are unloaded at the storage area. The fuel is fed to the boiler through bucket elevators and screw feeders. The quantity of biomass used by the project activity is calculated daily based on boiler efficiency which is monitored periodically.	daily	
Calorific value (H_{CV})	Kcal /kg	Bomb calorimeter	daily	The instruments are calibrated regularly as per the manufacturer's specification.
Moisture content of Husk (H_M)	%	Oven, Weighing balance	daily	The instruments are calibrated regularly as per the manufacturer's specification.
Ash content (H_A)	%	Weighing balance, Muffle furnace	daily	The instruments are calibrated regularly as per the manufacturer's specification.

QA/QC measure for monitoring

In order to ensure the accurate reporting of the monitored parameters and to avoid any kind of disparity in the data reported in the hard form and in the soft form, the following quality assurance measures have been adopted.

The monitoring supervisor notes the observations in the plant log books on a daily basis and forwards the same in the hard form and in the soft form to the Manager (Electrical) & the Manager (Utility). The Manager (Electrical) & the Manager (Utility) review the data received and compiles a daily report and sends it to the General Manager (Electrical) & the Deputy General Manager (Utility) for his perusal. The General Manager (Electrical) & the Deputy General Manager (Utility) generates monthly reports out of the daily reports for a month and sends the same to the Chief General Manager who reviews it and sends it to the Executive Director.

Internal Audit Procedure:

An internal audit team comprising of at least three senior officials has been constituted for auditing the data reported in excel reports and MIS with plant log books. The IAL internal audit team shall visit plant location every month and report its findings including any data mismatch between plant log books and MIS or any other daily report to the management with its observations. Internal audit reports shall be made available to verification DOE during verification visits.

The following flowchart gives the hierarchical structure for the CDM monitoring team.