California Environmental Protection Agency
Air Resources Board

California Regulation for the
Mandatory Reporting of Greenhouse Gas Emissions

Cement Plants
2012 GHG Reporting

March 13, 2013

Presentation Slides Available

http://www.arb.ca.gov/cc/reporting/ghg-rep/guidance/guidance-training.htm

Outline

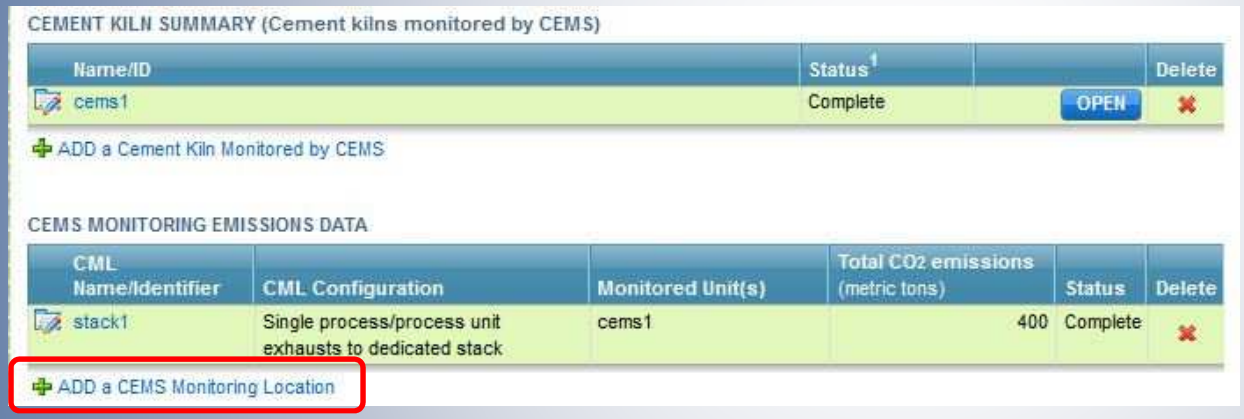
- Emissions Data
  - De Minimis
  - CEMS
  - Reporting Biogenic Emissions
  - GHG Monitoring Plan
- Product Data
  - Correctable Errors
  - Revisions to Material Misstatement Calculation
  - Guidance Document for Reporting Options

De Minimis Emissions

- Used to report small quantities of emissions
  - Upload to NEW Cal e-GGRT spreadsheet in Tool
- Verifier confirms estimate is reasonable and is <20,000 MT CO_2e and <3% of total emissions
- Sometimes for CH_4 and N_2O if CEMS is used
- May <u>not</u> be used for product data reporting

CEMS – Reporting CH_4 and N_2O

- All fuel amounts consumed must be reported, even if CEMS is used to report CO_2 emissions



CEMENT KILN SUMMARY (Cement kilns monitored by CEMS)

Name/ID	Status[1]		Delete
cems1	Complete	OPEN	✖

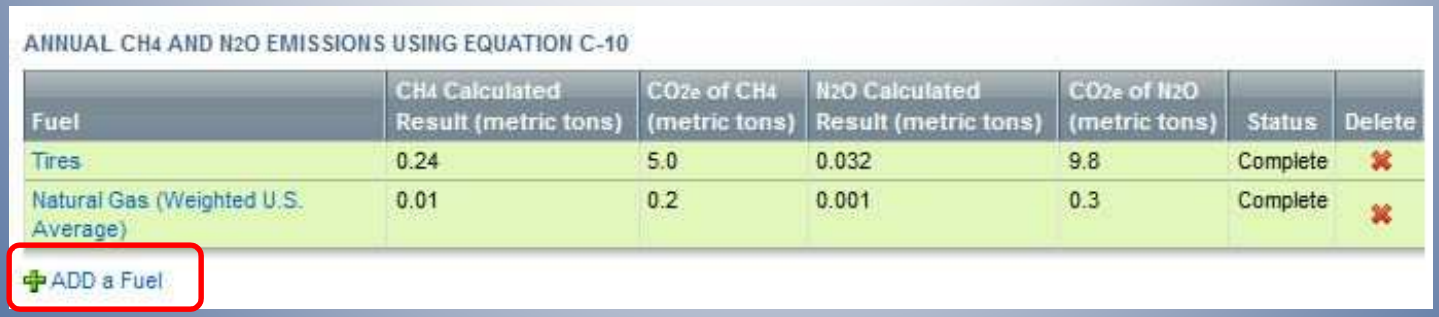
ADD a Cement Kiln Monitored by CEMS

CEMS MONITORING EMISSIONS DATA

CML Name/Identifier	CML Configuration	Monitored Unit(s)	Total CO_2 emissions (metric tons)	Status	Delete
stack1	Single process/process unit exhausts to dedicated stack	cems1	400	Complete	✖

ADD a CEMS Monitoring Location

1. Add a monitoring location
2. Add a fuel to report CH_4 and N_2O and fuel consumed



ANNUAL CH_4 AND N_2O EMISSIONS USING EQUATION C-10

Fuel	CH_4 Calculated Result (metric tons)	CO_2e of CH_4 (metric tons)	N_2O Calculated Result (metric tons)	CO_2e of N_2O (metric tons)	Status	Delete
Tires	0.24	5.0	0.032	9.8	Complete	✖
Natural Gas (Weighted U.S. Average)	0.01	0.2	0.001	0.3	Complete	✖

ADD a Fuel

CEMS - Biogenic Sampling

- (1) If combusting biomass fuels, CEMS must be used with accurate and representative quarterly biogenic stack sampling (ASTM methods) to determine biogenic fraction
  - Relieves requirement for fuel measurement accuracy
- (2) Alternatively, quantities of biomass fuels combusted must be measured directly and accurately
  - Needed to subtract exempt fuels from total emissions when determining what emissions are "covered"
- If quarterly biogenic sampling is not representative and amount of exempt fuel is not accurately known, all emissions are covered (with a compliance obligation)
  - i.e. use (1) or (2); if you can't use either, all emissions are assumed to be fossil (covered emissions)

Correctable Errors Must be Fixed

- All correctable errors must be fixed
- For “covered emissions” or “covered product data” not fixing correctable errors triggers adverse verification statement (§95131(b)(9))
- For all other data, not correcting triggers a non-conformance and ***may*** trigger an adverse verification statement
- Any disagreement regarding what is “correctable” contact ARB immediately

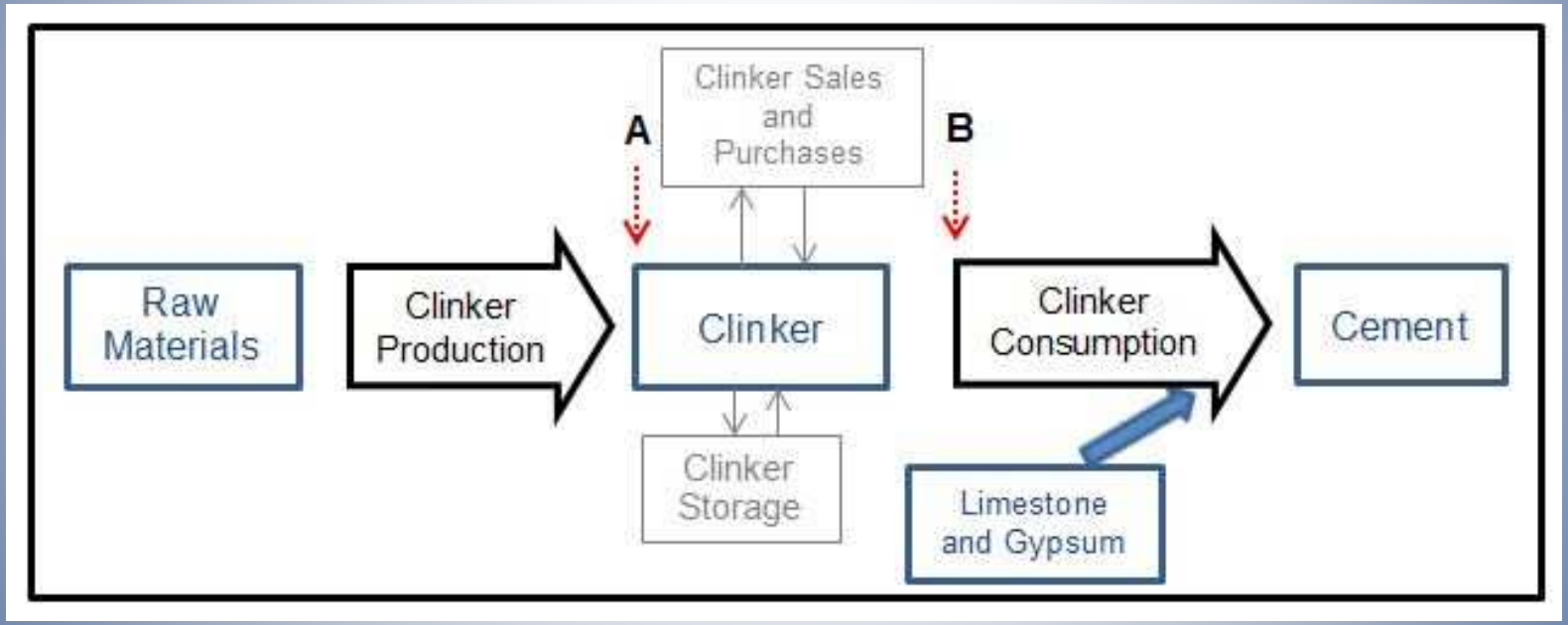
GHG Monitoring Plan

- Required by 95105(c) and includes written procedures, explanations, and equations specific to facility
- Provide plan to verification body early
  - Used to document that facility data systems and methods are complete and accurate
- Verifiers confirm that reporters have a clear understanding of the reported emission sources
  - Knowledge of data quality procedures is important
  - Use and update your plan (as needed) when explaining procedures to verifier
  - Simple drawings and schema are useful

Cement Product Data Reporting

Guidance for Product Data

- Covered product data includes clinker produced, clinker consumed, limestone and gypsum consumed for blending



- Measurement point A: Clinker produced
- Measurement point B: Clinker consumed

Accuracy of Covered Product Data

- Covered product data is sum of:
  Clinker Produced + Clinker Consumed + Limestone
  + Gypsum Consumed for Blending
  - Because of smaller quantities used, limestone and gypsum likely do not have to be accurate for the total product data sum to still be ±5% accurate
  - However, any single product that is not accurate is a non-conformance
    - If total covered products are accurate, but a single product is not, this results in a qualified positive verification statement
  - Material misstatement is only triggered if overall sum is not within ± 5% accuracy
    - Results in adverse product verification statement

Product Data Reporting Examples

- Following are two examples for reporting covered product data (next 2 slides)
- Annual data must be accurate
  - Monthly data can provide additional support on accuracy, but only annual data must be accurate
  - Verifiers will scrutinize entire process to determine conformance with regulation
    - During verification meetings, be prepared with all staff necessary to explain process

Product Data Reporting Examples
Example 1

- Directly measure products using accurate and calibrated truck scales, weigh feeders, and belt scales or other meters
  - Other inventory measurements using tank drop and pile surveys must still be accurate (±5%)
- Good option for cement plants if measurement equipment is robust and appropriate

Product Data Reporting Examples
Example 2

- Use cement sales and analysis data to back-calculate “covered products”
- Adjust for beginning and ending inventory to ensure only products that are produced are reported
  - Regulation intent was to report only amount produced during reporting year
  - If inventory adjustment is small, does not need to be highly accurate (most of the annual data is from truck scales, which are assumed to be accurate)
- Tie-in to financial data

Tips for Successful Verification

- Correctable Errors must be fixed
- “Covered Emissions” and “Covered Product Data” (totals) must meet accuracy requirements
- If verifier and reporter disagree on requirements, always contact ARB for assistance
- Maintain all ARB clarifications in GHG Monitoring Plan

Resources

Verification Guidance Materials

- Includes check-lists and other resources used by verifiers during verification
- Identifies key data needed for successful verification and compliance with the regulation
- To be posted here (in March): http://www.arb.ca.gov/cc/reporting/ghg-ver/ghg-ver.htm

Key Reporting Dates

Date	Activity
February 1	Regulatory deadline: Due date for electric power entities to register specified facilities outside California
February 13	Public release of Cal e-GGRT
April 10	Regulatory deadline: Reporting deadline for facilities and suppliers of fuels and carbon dioxide, except when subject to abbreviated reporting
June 3	Regulatory deadline: Reporting deadline for electric power entities and those subject to abbreviated reporting
July 15	Regulatory deadline: Deadline for corrections to RPS Adjustment data required for electric power entity data reports
September 3	Regulatory deadline: Final verification statements due (emissions data and product data)

GHG Reporting Contacts

Subject Matter	Contact
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