Continuous Monitoring Systems (CMS) Reporting of Excess Emissions & CMS Downtime

Live Expert Series

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Objective

- Provide a “live”, engaged discussion on completion of Excess Emissions and CMS Performance Reports

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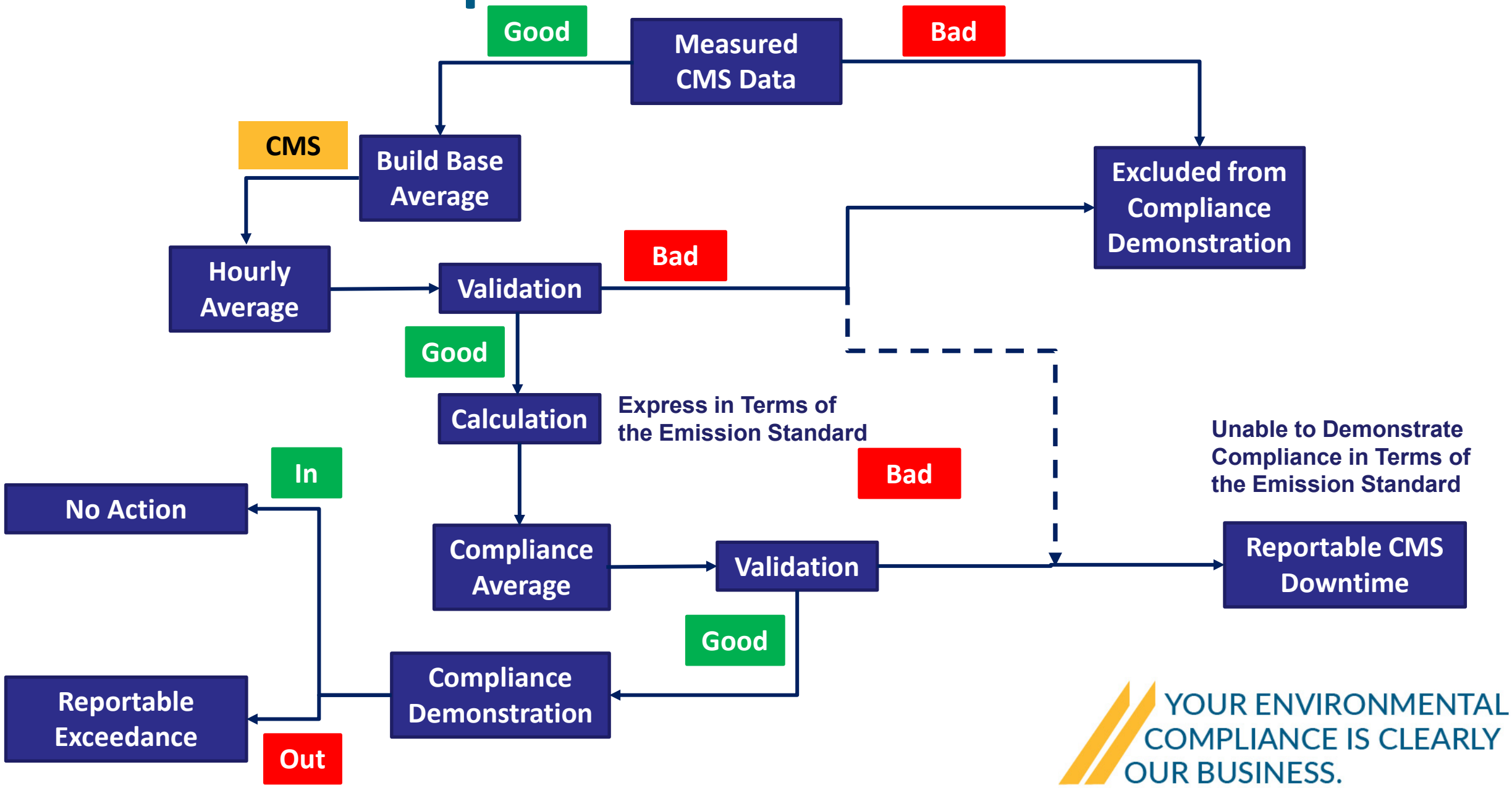
Compliance Demonstration



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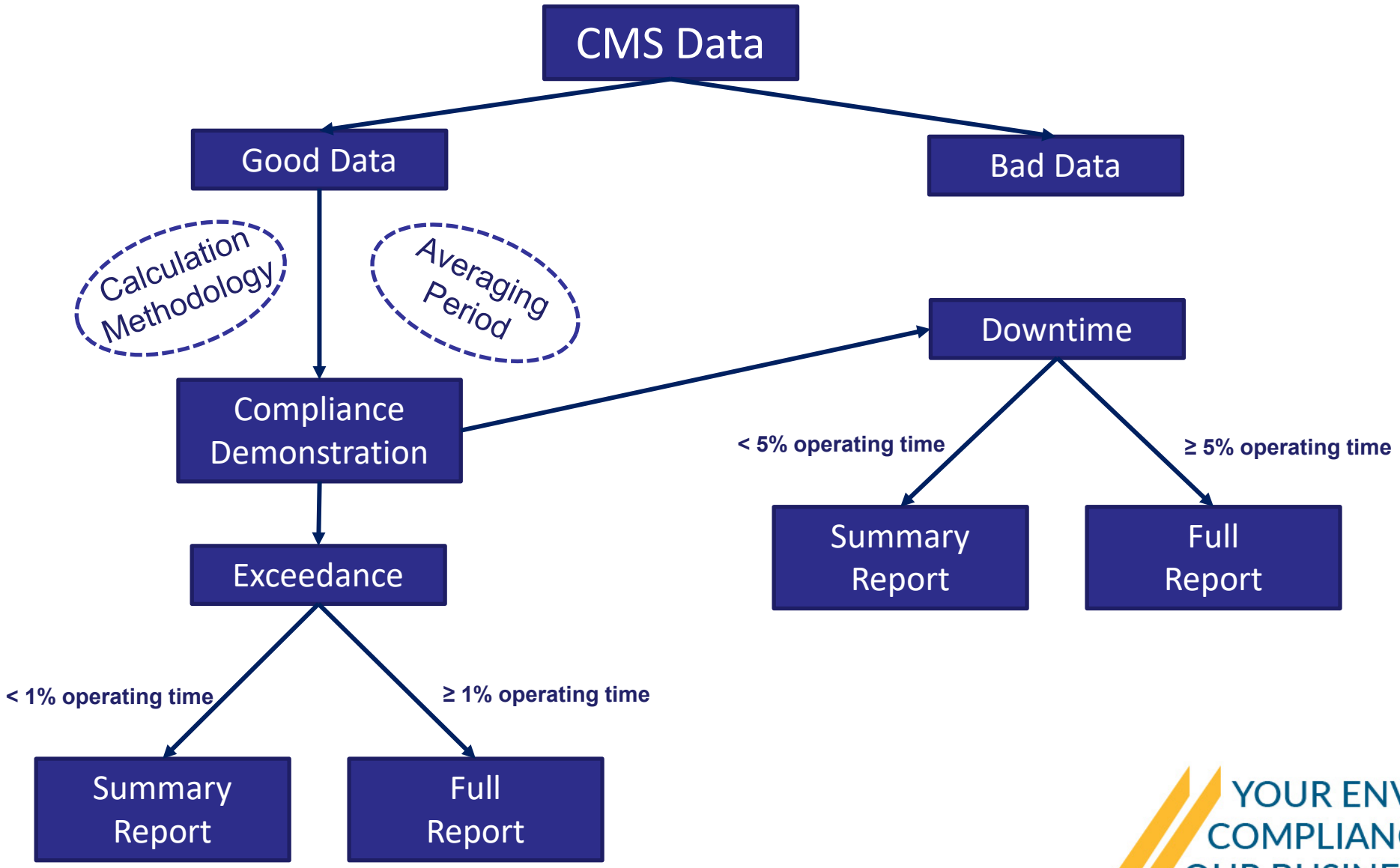
Building a Part 60 or 63 Performance Summary Report



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Performance Summary Report

Reporting period dates: From _____ to _____

Company:

Emission Limitation

Address:

Monitor Manufacturer and Model No.:
Date of Latest CMS Certification or Audit:

Process Unit Description:

Total source operating time in reporting period:

Emissions Data Summary		CMS Performance Summary	
1. Duration of excess emission in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Startup/shutdown		a. Monitor equipment malfunctions	
b. Control equipment problems		b. Non-Monitor equipment malfunctions	
c. Process problems		c. Quality assurance calibration	
d. Other known causes		d. Other known causes	
e. Unknown causes		e. Unknown causes	
2. Total duration of excess emission		2. Total CMS Downtime	
3. Total duration of excess emissions x (100) [Total source operating time]	%	3. [Total CMS Downtime] x (100) [Total source operating time]	%

Full Report (Additional Content)

- For each excess emissions period:
  - Start and End (Date/Time)
  - Nature and cause of any malfunction
    - Corrective action taken
    - Preventative measures adopted
- For each CMS downtime period:
  - Start and End (Date/Time)
  - Nature of the system repairs or adjustments

Data Assessment Report (DAR)

- Referenced in:
  - CEMS: 40 CFR Part 60 – Appendix F, Procedure 1 (P1) [§7]
  - COMS: 40 CFR Part 60 – Appendix F, Procedure 3 (P3) [§10.10]

- Applicability & Frequency:
  - *"At the reporting interval specified in the applicable regulation…"*

Data Assessment Report (DAR)

- Contents (Overlap):
  - Source owner or operator name and address.
  - Identification and location of monitors in the CEMS.
  - Manufacturer and model number of each monitor in the CEMS.

Data Assessment Report (DAR)

- Contents (Additional):
  - CEMS Assessment (CD, CGA, RATA, RAA)
    - Dates
    - Results (including cylinder gases certified values, the CEMS responses, and the calculations)
    - Out-of-Control (OOC) Information
      - Failing Results
      - Corrective Actions
      - Follow-up Audit

Data Assessment Report (DAR)

- Actions:
  - Review Gaps
  - Reference other Submitted Results
    - Available upon request?
  - Specifically Address DAR in Current Reports

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Questions or Comments?

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EXAMPLES

Regrouping Example

Opacity Exceedance Events - Duration

Plant: [PLANT NAME], [STATE]
Report Period: 01/01/2015 00:00 Through 06/30/2015 23:59
Time Online Criteria: 0 minute(s)

Source: [SOURCE]
Parameter: OPACITY
Interval: 001M

Standard Limit: 20

Incident ID	Start Date/Time	End Date/Time	Duration (minutes)	Max Value	Reason Code - Description Action Code - Description
1	01/26/2015 12:36	01/26/2015 13:23	54	97.86	02 - XS EMISSION - PROCESS PROBLEM 15 - SEE LOG BOOK/MEMO

Comments: Uncombined water in stack due to boiler tube leak causing errant opacity readings.

Regrouping Example

INCORRECT!!!

Emission data summary [a]			**CMS performance summary** [a]		
1. Duration of excess emissions in the reporting period due to:			1. CMS downtime in the reporting period due to:		
a. Startup/shutdown.....	*0*		a. Monitor equipment malfunctions	*0*	
b. Control equipment problems.....	*0*		b. Non-Monitor equipment malfunctions..	*0*	
c. Process problems.....	*54*		c. Quality assurance calibration	*0*	
d. Other known causes	*0*		d. Other known causes	*0*	
e. Unknown causes	*0*		e. Unknown causes	*0*	
2. Total duration of excess emissions	*0*		2. Total CMS Downtime	*0*	
3. Total duration of excess emissions x (100) / [Total source operating time]	*0.02*	%[b]	3. [Total CMS Downtime] x (100) / [Total source operating time]	*0.00*	%[b]

[a] For opacity, record all times in minutes. For gases, record all times in hours.

[b] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

Regrouping Example

CORRECT!!!

Emission data summary [a]		CMS performance summary [a]	
1. Duration of excess emissions in the reporting period due to:		1. CMS downtime in the reporting period due to:	
a. Startup/shutdown	*0*	a. Monitor equipment malfunctions	*54*
b. Control equipment problems	*0*	b. Non-Monitor equipment malfunctions	*0*
c. Process problems	*0*	c. Quality assurance calibration	*0*
d. Other known causes	*0*	d. Other known causes	*0*
e. Unknown causes	*0*	e. Unknown causes	*0*
2. Total duration of excess emissions	*0*	2. Total CMS Downtime	*0*
3. Total duration of excess emissions x (100) / [Total source operating time]	*0.00* %[b]	3. [Total CMS Downtime] x (100) / [Total source operating time]	*0.02* %[b]

[a] For opacity, record all times in minutes. For gases, record all times in hours.

[b] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

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CMS DOWNTIME

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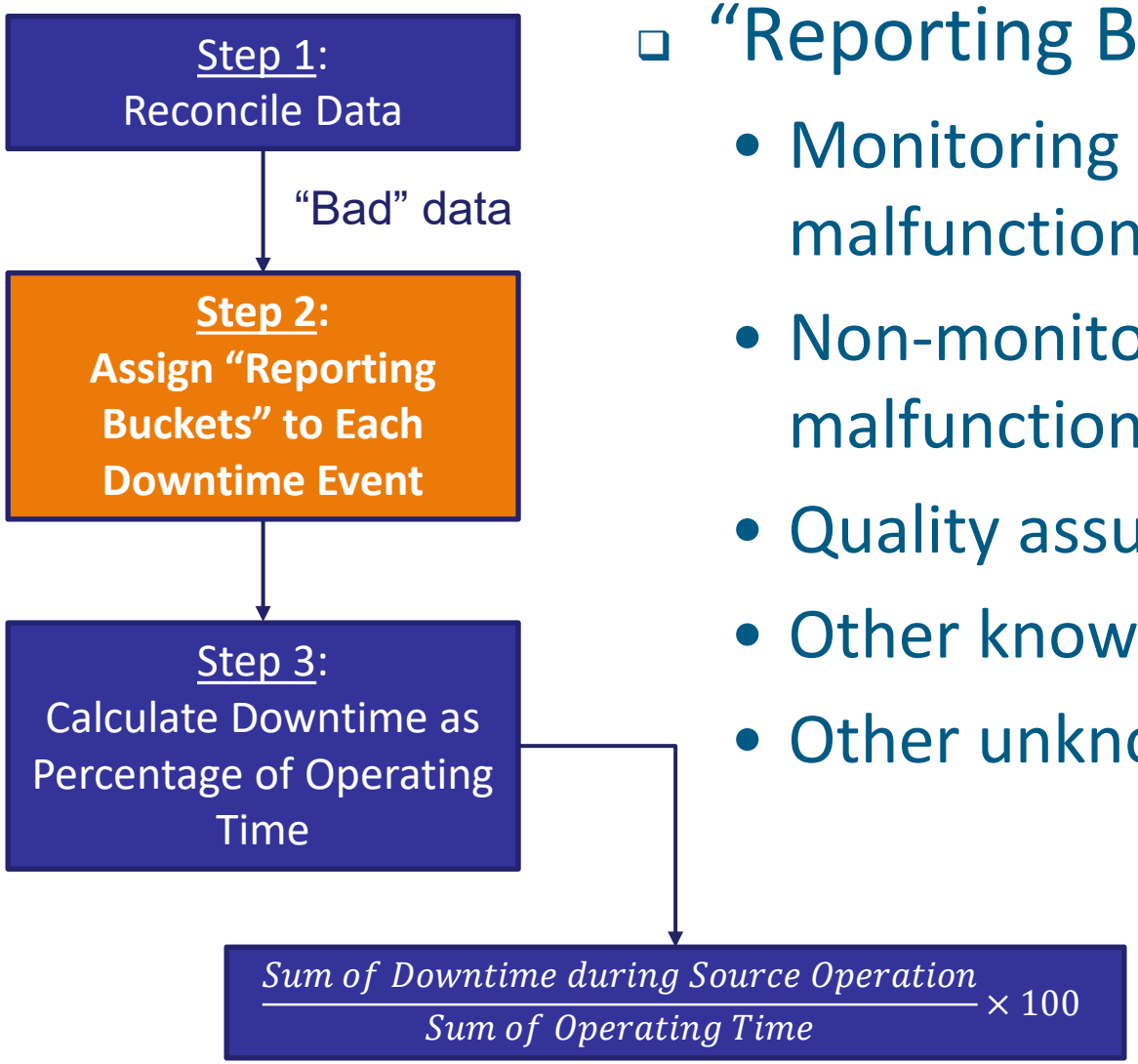
What Is CMS Downtime?

- CMS downtime classified as periods during which the CMS are:
  - Inoperative
  - Routine Maintenance or Other Repair
  - Out-of-Control (OOC)
  - Operating not Generating Accurate Data
- Cannot express measurements in terms of the emissions standard at the required averaging period.

Downtime Report: Buckets



- "Reporting Buckets" consist of:
  - Monitoring equipment malfunction
  - Non-monitoring Equipment malfunction
  - Quality assurance calibration
  - Other known causes
  - Other unknown causes

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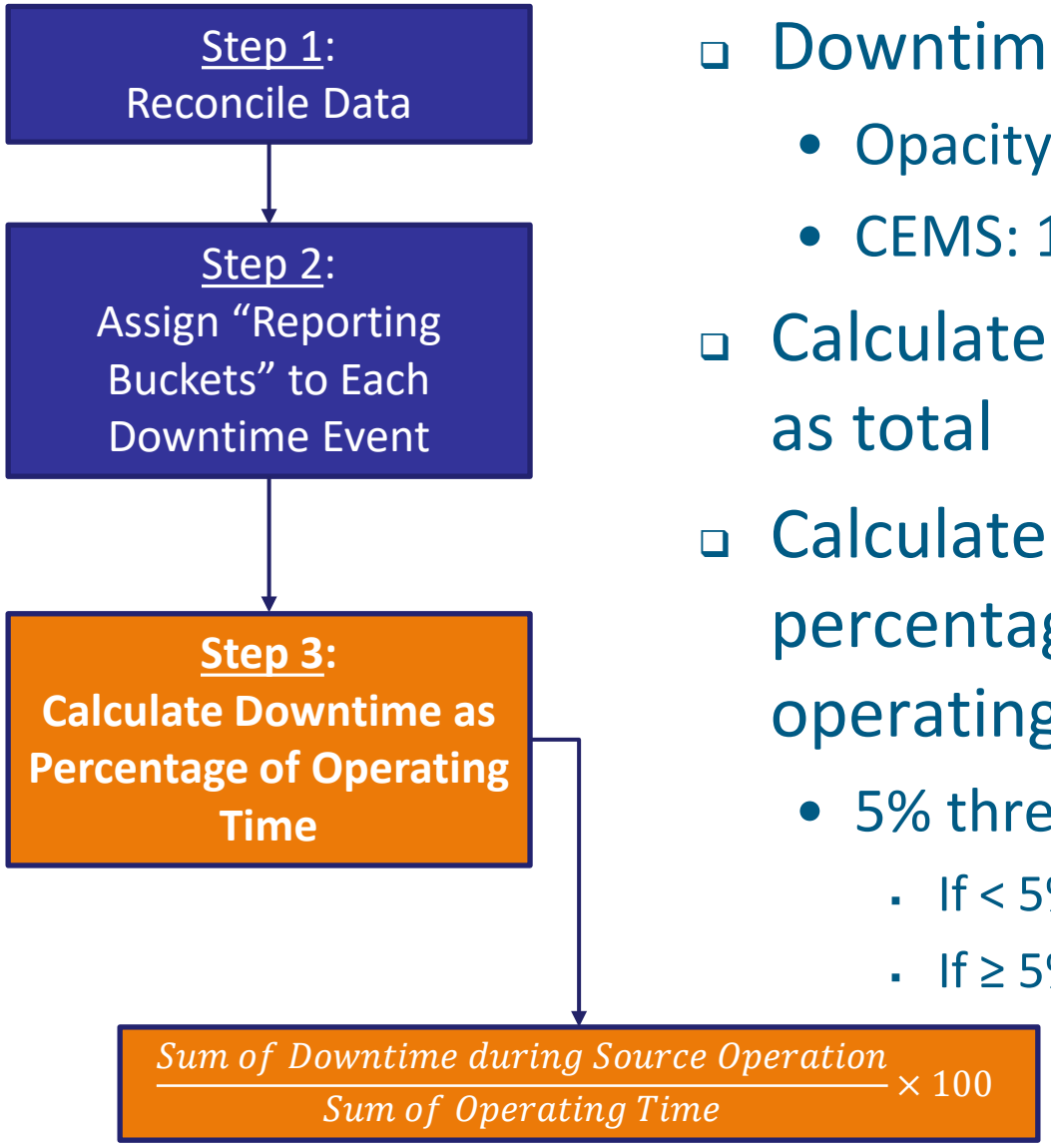
Downtime Report: Calculation



- Downtime Duration or Increments
  - Opacity: 1 or 6-min
  - CEMS: 1-hr
- Calculate for each "bucket" as well as total
- Calculate total downtime as percentage of total source operating time
  - 5% threshold
    - If < 5%; summary report
    - If ≥ 5%; full report

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EXCESS EMISSIONS

What Are CMS Excess Emissions?

- "Good" data only
- Emissions are in terms of the relevant standard
- Demonstrate compliance *in terms of the standard*
  - All necessary components (e.g., NO_X CEMS utilizing O_2)
  - Calculation methodology
- Averaging Period
  - Validation criteria
    - Is there enough "good" data to demonstrate compliance?
- Possible regrouping to downtime

Excess Emissions: Buckets

- "Reporting Buckets" consist of:
  - Startup/shutdown
  - Control equipment problems
  - Process problems
  - Other known causes
  - Other unknown causes

$$\frac{Sum\ of\ Excess\ Emissions\ during\ Source\ Operation}{Sum\ of\ Operating\ Time} \times 100$$

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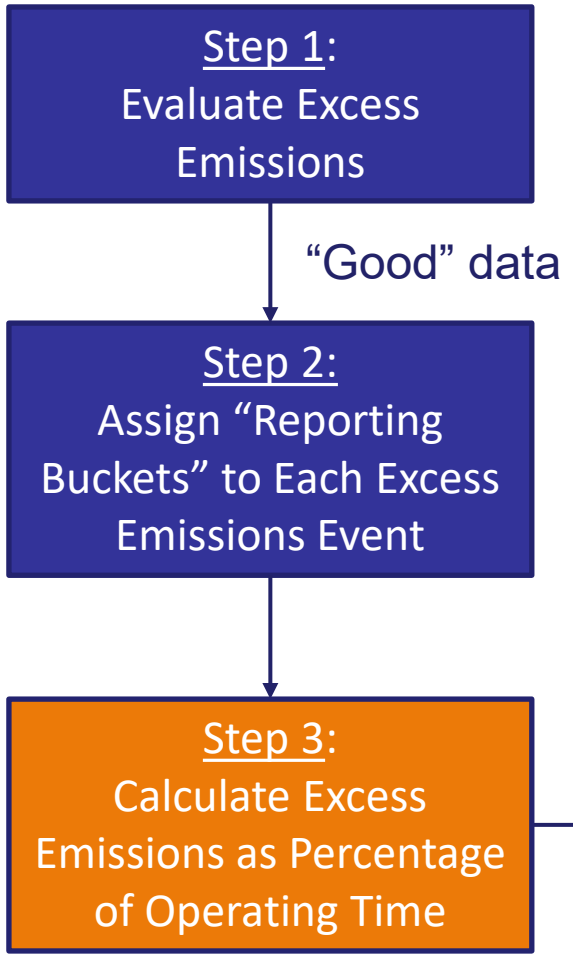
Excess Emissions: Calculations



$$\frac{Sum\ of\ Excess\ Emissions\ during\ Source\ Operation}{Sum\ of\ Operating\ Time} \times 100$$

- Excess Emissions Duration or Increments
  - Opacity: 1 or 6-min
  - CEMS: 1-hr
- Calculate for each bucket as well as total
- 1% threshold
  - If < 1%; summary report
  - If ≥ 1%; full report

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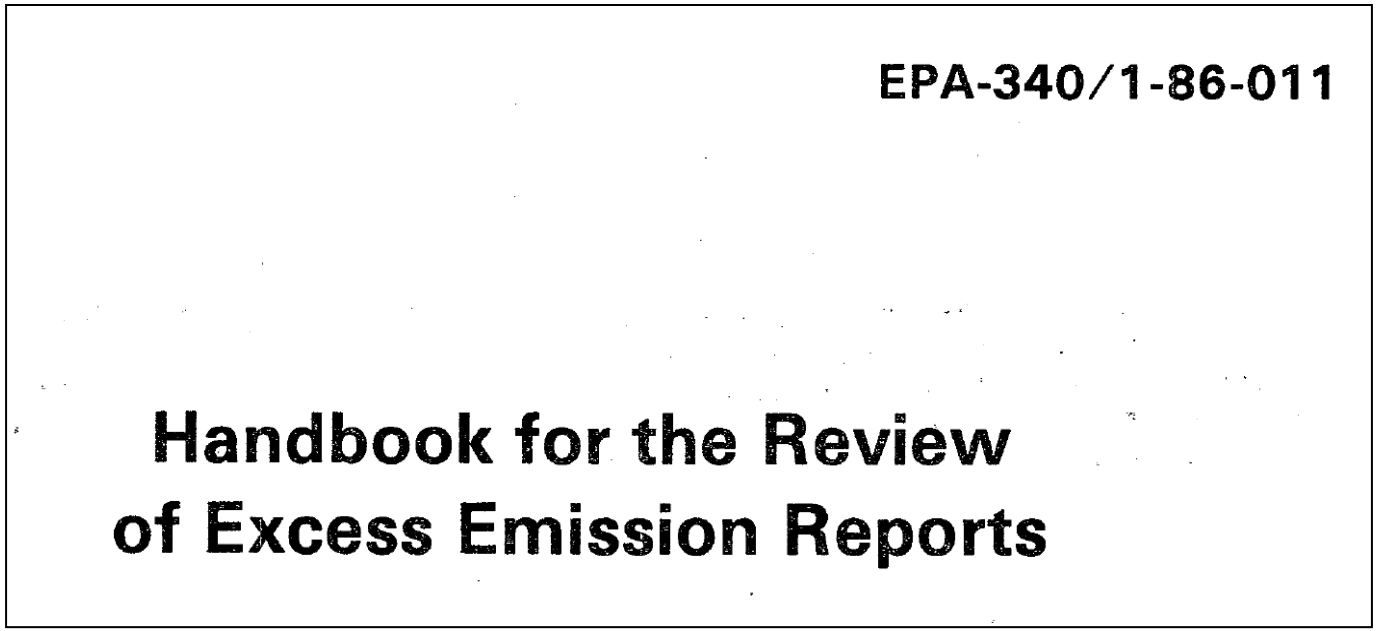
U.S. EPA Reporting Guidance

- U.S. EPA Guidance: Handbook for the Review of Excess Emission Reports
  [May 1986]


EPA-340/1-86-011

Handbook for the Review
of Excess Emission Reports

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Enforcement

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U.S. EPA Region 4 CEM Enforcement Plan *[May 5, 1989]*

THE CEM ENFORCEMENT PLAN

The first step of the CEP is the review of EERs. The review of an EER is essentially accomplished by summarizing an EER into the form presented in Figure 1. Although most state/local agencies already summarize EER into this form, we recommend that the sources be required by the state/local agencies to submit a summary EER along with the raw CEM data. This will significantly reduce the man-hours necessary for EER review and will assist when inputting the data into the CEM subset of AIRS. As each source has been acknowledged to be summarizing correctly, a less detailed review of raw CEM data should ensue.

The second step of the CEP is the determination of the appropriate follow-up action. In order to determine the appropriate follow-up action, data from the summary EER will be used to target

Report Thresholds – NOT ENFORCEMENT

- If the CMS downtime total more than:
  - 5% of total source operating time
- If the excess emissions or operating parameter deviations total more than:
  - 1% of total source operating time
- Full report requiring a more in-depth description of each event must be submitted.

CMS Downtime & Excess Emissions

- ≤ 2.0%
  - Written Acknowledgement
  - Encouragement
- >2.0% and ≤5.0%
  - Written

CMS Downtime & Excess Emissions

- >5.0% and ≤10.0%
  - Written Warning
  - Additional Information of Occurrences
  - Corrective Action Plan
- >5.0% and ≤10.0% for 2 consecutive quarters OR >10%
  - Notice of Violation (NOV)
  - Performance Testing and Recertification
  - Corrective

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