

Cedar Software – What's New – What's Coming

Kevin Batchelder

Lead Software Developer

September 14, 2021



Breeze75

- Few changes over last 2 years
- EPA-required changes for reporting invalid hours for NOx-diluent systems (MODC 46)
- EPA-required changes for reporting monitored bypass stacks (MODCs 47 and 48)
- Upcoming changes to support ECMPS redesign

Redundant Cedar Servers

- Primary and Secondary servers
- Redundant database on each server
- Both servers run 24/7
- Data synchronization, typically within 10 minutes

- Secondary server takes over when Primary is unavailable
- Cedar Data Monitor automatically switches to Secondary
- Automatically switches back when Primary is available again

Part 60 Cal Fail OOC 4xPS

- Part 60 Appendix F 4.3.1:
 - If analyzer fails cal check $\geq 4x$ performance specification
 - Data is invalid back to previous passed cal check
- Cedar performs this back-invalidation automatically
 - Monitor Code 74 (invalid)
 - Part 60 only

New Monitor Code 75

- MC 75 indicates valid data
- Hour is valid but one or two 15-minute periods are invalid due to calibration or maintenance
 - Cedar looks at 1-minute monitor codes to find cal / maint
- Used for Part 75 1-hour data

Cal Check – Expired Cylinder

- Cedar checks cylinder expiration date when cal check is performed
- Alarm for expired cylinder
- Red indication on report

- Alarms for upcoming cylinder expiration dates now start 60 days prior to expiration (instead of 45 days)

CGA / Linearity – out-of-range gas

- Cedar checks for reference gas outside allowable range
- Alarm when QA test is performed
- Red notification in editor and on report
- Also checks for expired cylinders

Report Date Selection

- Date selection looks similar for most reports
- Selected option is highlighted
- “To” is optional
- Example screenshots

Report Date Selection – Current, Previous, Last X Periods

The screenshot shows the CeDAR Reports application window. On the left is a vertical sidebar with report categories: Hourly, Daily (selected), Monthly, Quarterly/Annual, Events, Calibration Checks, Excess Emissions, CEMS Downtime, Alarms, Audits, and CGA/linearity. The main area displays a list of reports, with 'Facility Daily GHG Emissions Report' highlighted in blue. On the right is a 'Days' selection panel with several radio button options: 'Today', 'Yesterday', 'Last 10 Days +Today' (highlighted in yellow), 'From 2021 Q3, 4', 'To', 'From 2021 September', 'To', '12 months ending 2021 September', 'From 9/11/2021', and 'To'.

CeDAR Reports

File Tools Help

Hourly

Daily

Monthly

Quarterly/Annual

Events

Calibration Checks

Excess Emissions

CEMS Downtime

Alarms

Audits

CGA/linearity

Facility Daily GHG Emissions Report

Facility Daily Mass Emissions Report

Turbine 1- Daily 40CFR75 Emissions & Operations Report

Turbine 1- Daily Emissions Report

Turbine 1- Daily GHG Emissions Report

Turbine 1- Daily Mass Emissions Report

Turbine 1- Daily Operations Report

Turbine 2- Daily 40CFR75 Emissions & Operations Report

Turbine 2- Daily Emissions Report

Turbine 2- Daily GHG Emissions Report

Turbine 2- Daily Mass Emissions Report

Turbine 2- Daily Operations Report

Days

Today Yesterday

Last 10 Days +Today

From 2021 Q3, 4

To

From 2021 September

To

12 months ending 2021 September

From 9/11/2021

To

Report Date Selection – by Quarter / Semiannual / Annual

CeDAR Reports

File Tools Help

Hourly

Daily

Monthly

Quarterly/Annual

Events

Calibration Checks

Excess Emissions

CEMS Downtime

Alarms

Audits

CGA/Linearity

Turbine 1- CO lbs
Turbine 1- NH3 Slip lbs
Turbine 1- Normal Ops CO ppm @15% O2
Turbine 1- Normal Ops NH3 Slip ppm @15% O2 (24-Hr Block Limit)
Turbine 1- Normal Ops NH3 Slip ppm @15% O2 (30-Day Rolling Limit)
Turbine 1- Normal Ops NOx ppm @15% O2
Turbine 1- NOx lbs
Turbine 1- NOx ppm @15% O2 30-Day (Subpart KKKK)
Turbine 2- CO lbs
Turbine 2- NH3 Slip lbs
Turbine 2- Normal Ops CO ppm @15% O2
Turbine 2- Normal Ops NH3 Slip ppm @15% O2 (24-Hr Block Limit)
Turbine 2- Normal Ops NH3 Slip ppm @15% O2 (30-Day Rolling Limit)
Turbine 2- Normal Ops NOx ppm @15% O2
Turbine 2- NOx lbs
Turbine 2- NOx ppm @15% O2 30-Day (Subpart KKKK)

Quarters

Current quarter Previous quarter

Last Quarters +Current

From

To

Q1, 2
Q3, 4
Q1, 2, 3, 4
Q1
Q2
Q3
Q4

From

To



Report Date Selection – by Month

The screenshot displays the CeDAR Reports application window. On the left is a vertical navigation menu with buttons for: Hourly, Daily, **Monthly**, Quarterly/Annual, Events, Calibration Checks, Excess Emissions, CEMS Downtime, Alarms, Audits, and CGA/Linearity. The main area lists various reports, including Facility and Turbine 1-2 reports for GHG Emissions, Mass Emissions, Compliance, and Operations. On the right, a 'Months' configuration panel is shown with several options: 'Current month' and 'Previous month' (both unselected); 'Last 10 Months' with a '+Current' checkbox (unselected); 'From 2021 Q3, 4' (unselected); 'From 2021 September' (selected and highlighted in yellow); '12 months ending 2021 September' (unselected); and 'From 9/11/2021' (unselected).

CeDAR Reports

File Tools Help

Hourly

Daily

Monthly

Quarterly/Annual

Events

Calibration Checks

Excess Emissions

CEMS Downtime

Alarms

Audits

CGA/Linearity

Facility Monthly GHG Emissions Report

Facility Monthly Mass Emissions Report

Turbine 1- Monthly Emissions Compliance Report

Turbine 1- Monthly Emissions Report

Turbine 1- Monthly GHG Emissions Report

Turbine 1- Monthly Mass Emissions Report

Turbine 1- Monthly Operations Report

Turbine 2- Monthly Emissions Compliance Report

Turbine 2- Monthly Emissions Report

Turbine 2- Monthly GHG Emissions Report

Turbine 2- Monthly Mass Emissions Report

Turbine 2- Monthly Operations Report

Months

Current month Previous month

Last 10 Months +Current

From 2021 Q3, 4

To

From 2021 September

To

12 months ending 2021 September

From 9/11/2021

To

Report Date Selection – 12 Months Ending

The screenshot displays the CeDAR Reports application window. On the left is a vertical navigation menu with buttons for: Hourly, Daily, **Monthly**, Quarterly/Annual, Events, Calibration Checks, Excess Emissions, CEMS Downtime, Alarms, Audits, and CGA/Linearity. The main area lists various reports, with 'Turbine 2- Monthly Emissions Compliance Report' highlighted. On the right, the 'Months' configuration panel includes several options: 'Current month', 'Previous month', 'Last 10 Months +Current', and two 'From/To' date range selectors. The '12 months ending' option is selected and highlighted in yellow, with '2021' and 'August' chosen in its respective dropdowns. Below it, another 'From/To' selector is visible with '9/11/2021' in the 'From' field.

CeDAR Reports

File Tools Help

Hourly

Daily

Monthly

Quarterly/Annual

Events

Calibration Checks

Excess Emissions

CEMS Downtime

Alarms

Audits

CGA/Linearity

Facility Monthly GHG Emissions Report

Facility Monthly Mass Emissions Report

Turbine 1- Monthly Emissions Compliance Report

Turbine 1- Monthly Emissions Report

Turbine 1- Monthly GHG Emissions Report

Turbine 1- Monthly Mass Emissions Report

Turbine 1- Monthly Operations Report

Turbine 2- Monthly Emissions Compliance Report

Turbine 2- Monthly Emissions Report

Turbine 2- Monthly GHG Emissions Report

Turbine 2- Monthly Mass Emissions Report

Turbine 2- Monthly Operations Report

Months

Current month Previous month

Last 10 Months +Current

From 2021 Q3, 4

To

From 2021 September

To

12 months ending

2021 August

From 9/11/2021

To

Alarm Email Changes

- Added options to specify alarm categories for alarm emails
 - LIMIT – exceedances / warnings
 - CEMS – alarms from monitoring systems
 - COMM – loss of communication
 - Other – everything else (backup failures, disk space, etc.)
- New master checkbox to enable/disable alarm emails
- Example screenshot

Cedar 7.13



Options

General

Alarms - Visual

Alarms - Audible

Alarms - Acknowledgment *

Alarms - Displayed Units

Alarms - Email Options *

Alarms - Email Server *

Automatic Features *

Recipients (separate addresses with commas):
user1@example.com, user2@example.com

Send email for alarms

| Category | Serious | Warning |
|----------|-------------------------------------|--------------------------|
| LIMIT | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| CEMS | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| COMM | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Other | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Send test email at 8:30 every day

Combine multiple alarms into one email (recommended)

* Applies to all users

OK Cancel

Exceedance Data on Reports

- Exceedance data appears in red

24-Hour Emission Limits

CO ppm @15% O2 - 50

| Day | O2% | CO ppm | CO ppm @15% O2 | CO lb/mmBtu | CO lbs |
|-----|------|--------|----------------|-------------|--------|
| 01 | Down | Down | Down | Down | Down |
| 02 | Down | Down | Down | Down | Down |
| 10 | Down | Down | Down | Down | Down |
| 11 | 14.7 | 7.4 | 7.8 | 0.0175 | 86.09 |
| 12 | 14.8 | 6.2 | 5.9 | 0.0133 | 111.81 |
| 13 | 14.7 | 5.6 | 5.3 | 0.0119 | 100.44 |
| 14 | Down | Down | Down | Down | Down |
| 15 | Down | Down | Down | Down | Down |
| 16 | Down | Down | Down | Down | Down |
| 17 | Down | Down | Down | Down | Down |
| 18 | Down | Down | Down | Down | Down |
| 19 | 15.0 | 9.4 | 10.9 | 0.0244 | 92.53 |
| 20 | 17.0 | 74.0 | 112.7 | 0.2520 | 8.29 |
| 21 | 15.1 | 10.2 | 12.1 | 0.0270 | 70.51 |

State / Local Changes

- San Joaquin Valley APCD
 - Added support for SFTP (internet) submittal
 - Removed dialup modem support
- New Jersey EEMPR
 - Migrated report utility from Cedar 4 to Cedar 7
- Utah electronic reporting
 - Migrated report utility from Cedar 4 to Cedar 7

State / Local Upcoming

- South Coast AQMD
 - Regulatory changes to mimic 40 CFR 60 and 75
 - Phased in, starting 2022
- Alberta
 - Jan 1, 2022
- New Jersey 3-hour rolling exceedance duration
 - 2022 Q1

Cylinder Manager (in development)

- List of available cylinders
- Gas Profiles show current CEMS cylinder data
- Drag-and-drop to change cylinder
- Changes propagate to all gas profiles that use the same cylinder
- Changes from CEMS HMI panel also propagate



Available Cylinders

Add Cylinder

Cylinder State Gas Type

Clear Filters

| Cylinder ID | Exp Date | Vendor ID | NO | NOX | CO | O2 | S02 | CO2 | |
|---------------|----------------|-----------|-----------|---------|-----------|--------|-----|--------|-----|
| BE88098 2 | 2022-11-2 8 | B22020 | | 12 ppm | | | | 49.9 % | ... |
| DH13892 | 2023-06-2 4 | F32020 | | | | 17.8 % | | | ... |
| HE7DD98 7 | 2022-07-0 9 | A12017 | | 9.1 ppm | 17.1 ppm | | | | ... |
| FF732107 | 2022-11-2 8 | B22020 | | | | | | 12.8 % | ... |
| 1L1465 | 2017-06-1 0 | A52014 | 91.3 ppm | | | | | | ... |
| 504341 | 2028-02-1 7 | B22020 | 177.6 ppm | | | | | | ... |
| AAL0693 08 | 2018-08-1 8 | A12015 | 8.5 ppm | | | | | | ... |
| AAL0701 01 | 2027-03-2 1 | A12019 | | | 9.292 ppm | | | | ... |
| AAL0708 90 | 2017-06-2 5 | A12014 | 18.1 ppm | | | | | | ... |
| AAL0713 70 | 2027-01-3 0 | B72019 | 181.6 ppm | | 1821 ppm | | | | ... |

Assigned Cylinders

In-Service Cylinders

Gas Profiles

Unit Gas Type

Gas Description

Clear Filters

Turbine 1B NOx/H Linearity High Gas

NOX Allowable: 80 - 100 ppm

Cylinder ID:

CC832093SS

Expires: Oct 2, 2023

Vendor ID: F32019

NOX 87.3 ppm

CO 189 ppm

Turbine 1B NOx/H Linearity Mid Gas

NOX Allowable: 50 - 60 ppm

Cylinder ID:

270194ALM

Expires: Apr 12, 2024

Vendor ID: B22020

NOX 56.8 ppm

CO 106 ppm

Cedar Software

Questions?

