

# U.S. EPA's Electronic Reporting Tool and Compliance and Emissions Data Reporting Interface:

## What Do the Requirements REALLY Mean for Petroleum Refineries?

AFPM/API Refinery Sector Rule Workshop

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Presented by All4 Inc.

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# Why Should You Pay Attention?

- Revisions to 40 CFR Part 63, Subpart CC and Subpart UUU (“Refinery MACT 1” and “Refinery MACT 2”) contain reporting provisions which require use of ERT and CEDRI. **Applicable upon compliance date.**
  - Fenceline monitoring data [40 CFR §63.655(h)(8)]
  - Results of performance tests or CEMS performance evaluations [40 CFR § § 63.655(h)(9) and 63.1575(k)]

# Background

- ❑ U.S. EPA promulgating regulations under 40 CFR Part 60 (NSPS) and Part 63 (NESHAPs) which require electronic reporting, or “E-Reporting”.
- ❑ E-Reporting completed using U.S. EPA’s Compliance and Emissions Data Reporting Interface (**CEDRI**).
- ❑ CEDRI is located on U.S. EPA’s Central Data Exchange (**CDX**).
- ❑ Some reports (e.g., stack test results) must be compiled using the Electronic Reporting Tool (**ERT**) before being uploaded to CEDRI.
  - *Two separate entities*

# E-Reporting Basics

- E-Reporting includes the following:
  - Performance test results
  - Monitoring data
  - Ongoing compliance reports
  - Emissions reports
  - Notifications [e.g., Notification of Compliance Status (NOCS)]
- Performance tests and CEMS RATA results
  - Compile using ERT
  - Upload to CEDRI

# Using ERT

- Four main sections:
  - Test Plan
  - Run Data
  - Process Data
  - Attachments/Comments
- Majority of effort is with ERT
  - U.S. EPA estimates 60-80 hours from start to finish of stack test/RATA report
- Issues with software/nuances with data entry
- Must create “.zip” file

The screenshot displays the ERT software interface. At the top, there is a ribbon menu with tabs for FILE, HOME, CREATE, EXTERNAL DATA, and DATABASE TOOLS. Below the ribbon are various toolbars including Views, Clipboard, Sort & Filter, and Records. The main area is titled "ERT - Main Menu" and contains several functional groups:

- Setup / Test Plan:** Includes buttons for Test Plan, Quick Jumps (SCC, Process Info, Locations/Methods).
- Test Data:** Includes buttons for Run Data, Process Data, Tester DQ Assessment, Attachments, Completeness Check, and Report Verification.
- Regulatory Agency Review:** Includes buttons for Test Plan Review, Regulatory Field Observation Documentation, Regulatory Assessment of Supporting Documentation, Emissions Results, and Comprehensive Regulatory Test Assessment.
- Printed Reports:** Includes a button for Select Report / Data Table and an Administration section with Help / Sys. Reports.

Below the main menu, there is a section for project data management with buttons: Select Project Data Set, Create New Project Data Set, Save Project Data Set As, and Compact Project Data Set. A text box shows the current project data set path: C:\Users\ktorney.ALL4\Desktop\ProjectData\AFPM Example.acddb - Date Created: 1/4/2016.

At the bottom, there is a "Project Submittal History" section with a table and a "Create ERT Submission Package File" button. The table has columns for Action, SubmitDate, SubmittedTo, SubmittedFr, and Comment. The status bar at the bottom indicates "Record: 1 of 1" and "No Filter".

# Using ERT – Test Plan

- Although performance test plans are not yet required under E-Reporting, they must be completed in ERT before you can enter test report.
- Examples of data entered:
  - Basic facility information
  - Emissions unit information
  - Testing location description
  - Regulatory information
  - Lab data
  - Control devices/parameters monitored
  - Calibration gas concentrations
  - Deviations/description of sampling methods

The screenshot displays the 'Test Plan' form in a web application. The form is titled 'Test Plan' and contains the following fields and sections:

- Test Plan Title:** MACT Testing
- Test Plan Date:** 1/4/2016
- Facility Name:** Example Petroleum Refinery
- Address:** 123 Refinery Road
- City:** Refineryville
- State/Zip:** TX 12345-6789
- County:** Houston Co
- Contact:** Mr. Environmental
- Phone:** (123) 456-7890
- Fax:**
- email:** MrEnvironmental@abc.com
- AFS Number:** 1234567891
- Industry NAICS:** 324110
- FRS:** 123456789012
- State ID:** 123
- Latitude:** 29.76040
- Longitude:** -95.36980
- Testing Company:** Example Stack Tester
- Address:** 123 Stack Tester Street
- City:** Refineryville
- State/Zip:** TX 12345-6789
- Contact:** Mr. Tester
- Phone:** (123) 456-7891
- Fax:**
- email:** MrTester@abc.com
- Testing Company Project Number:**

Buttons for 'Attach Test Company Certification' and 'Attach Field Team Lead Certification' are visible. A legend at the bottom indicates that fields marked with an asterisk (\*) are required.



# Using ERT – Run Data

- Certain data fields must have values entered for report to compile (not necessarily fields with asterisks)
  - Dummy values must be entered (typically as “0”)
  - Trial and error
- Option to upload spreadsheet for point data instead of entering directly into ERT
- Emissions are calculated by ERT
  - May not exactly match stack test report (~5% error is okay)

The screenshot displays the 'Run Data Details' window in the ERT software. The interface is organized into several sections:

- Header:** Facility: Example Petroleum Refinery; Permitted Source ID/Description: 001 Unit 1; Select Location - Method: Unit 1 Outlet - Method 5; Select Run: Method 5 - 1.
- Method Setup:** Method: Method 5; RunNumber: 1; RunDate: 7/14/2015.
- Equipment ID:** Dry Gas Meter, Control Console (M-18), Umbilical (0), StackTC (RPT-107), TedlarBag (0), OrsatPump (26-1), Probe/Pitot (10' SS/Glass), Nozzle (G-4-263).
- Calibration:** Y (0.9975), DH@ (1.986), Cp (0.84), Dn (0.215).
- Ambient:** Pb (28.01), Pstatic (-0.35), Temperature (0).
- Filters:** FilterNum1 (139), FilterNum2 (0), FilterNum3 (0).
- Concentrations (run ID if used):** % CO2\* (12 - User Entered), % O2\* (7 - User Entered).
- Defaults:** tstd\* (68), Pstd\* (29.92), % CO (0).
- Checks:** Vacuum (Pre: 10, Post: 5), Leak Check Total Volume\* (0.058), Leak Rate (0), Pitot (Yes/No), Nozzle (Yes/No), Stack TC (Yes/No).
- Fuel Type:** Fd (0), Fw (0), Fc (0).

Fields marked with \* are required to calculate emissions / concentrations.

# Using ERT – Run Data Cont.

Run Data Details

Facility: Example Petroleum Refinery Open Expanded

Permitted Source ID/Description: 001 Unit 1

Select Location - Method: Unit 1 Outlet - Method 5 Add New Run Data Delete Run Data

Select Run: Method 5 - 1 Change Run Number Change Run Date

Method Setup | Header Data | Point Data | Lab Data | Sampling/Stack Data Results | Cyclone Cut Size | Emissions

Method: Method 5    RunNumber: 1    RunDate: 7/14/2015

Note: Shaded columns are required for data results calculations!

Poi#	BeginTim	EndTim	Clock	GasMeter	DeltaP	OrificePresDesir	OrificePresAct	StackTem	ProbeTemp	FilTempOne	FilTempTwo	FinalExitTem	DryGaslr	DryGasOutlr	PumpVa	SampleRate	Notes
B-6	0	5	7:40:00 AM	411.701	0.71		1.3	118	260	259	259	44	68	68	2		
B-6	5	10		415.050	0.72		1.3	118	260	260	260	42	69	69	2		
B-5	10	15		418.140	0.75		1.4	120	261	261	261	42	69	69	2		
B-5	15	20		421.270	0.74		1.3	121	261	261	261	42	70	70	2		
B-4	20	25		424.480	0.77		1.4	120	260	261	261	43	70	70	2		
B-4	25	30		427.820	0.76		1.4	119	261	260	260	43	70	70	2		
B-3	30	35		431.200	0.77		1.4	119	261	260	260	43	71	71	2		
B-3	35	40		434.570	0.79		1.4	120	261	261	261	44	71	71	2		
B-2	40	45		437.860	0.75		1.4	120	260	260	260	44	71	71	2		
B-2	45	50		441.200	0.73		1.3	119	260	259	259	44	71	71	2		
B-1	50	55		444.490	0.72		1.3	119	260	260	260	44	71	71	2		
B-1	55	60		447.620	0.72		1.3	120	261	261	261	45	71	71	2		
A-6	60	65		450.844	0.7		1.3	120	262	261	261	48	71	71	2		
A-6	65	70		454.210	0.71		1.3	120	262	261	261	46	71	71	2		
A-5	70	75		457.420	0.73		1.3	119	261	260	260	45	71	71	2		
A-5	75	80		460.690	0.73		1.3	120	261	261	261	45	71	71	2		
A-4	80	85		463.810	0.72		1.3	121	260	262	262	45	72	72	2		
A-4	85	90		466.970	0.73		1.3	121	260	262	262	45	72	72	2		
A-3	90	95		470.160	0.74		1.3	120	261	261	261	46	72	72	2		
A-3	95	100		473.350	0.75		1.4	120	260	261	261	46	73	73	2		
A-2	100	105		476.660	0.75		1.4	121	262	260	260	46	73	73	2		
A-2	105	110		480.200	0.77		1.4	120	262	261	261	46	73	73	2		
A-1	110	115		483.390	0.7		1.3	119	261	260	260	47	74	74	2		
A-1	115	120	9:55:00 AM	486.610	0.7		1.3	119	260	260	260	47	74	74	2		
*										0	0	0				0	



# Using ERT – Process Data

- ❑ Must link process data to associated run data
- ❑ Examples of data entered:
  - Process values and target rates to be monitored during testing:
    - Heat input
    - Fuel usage
  - Control device parameters and target rates to be monitored during testing:
    - ESP secondary voltage
    - Scrubber liquor flowrate
  - Lab data:
    - Fuel moisture content
    - Fuel sulfur content

# Using ERT – Attachments

- Include individual attachments from test report
  - U.S. EPA’s WebFIRE database evaluates number of attachments included and determines “validity” of test
  - Guidance is to also add attachment of full test report
- COMMENTS TO REVIEWER ARE IMPORTANT

The screenshot shows the 'Test Plan' interface for 'MACT Testing' dated 1/4/2016. It features a table with columns for 'AttachDesc' and a count of attachments. The table lists various attachments such as 'Source/Process Flow Diagram', 'Alternate Method Request and Approval (Item 8) (optional)', 'EPA Method 1 Location Supporting Documentation (Item 9) (optional)', 'Cyclonic Flow Absence Supporting Documentation (Item 10)', 'Pre-Test Meter Boxes/DGMs Calibrations', 'Post-Test Meter Boxes/DGMs Calibrations', 'Nozzles Calibrations', 'Pitots Calibrations', 'Thermocouples Calibrations', 'Sampling Locations Dimensions and Point Locations', 'Run Field Data Sheets', 'Moisture Recovery', 'Lab Data', 'Chain-of-Custody', 'Observer Comments', 'Documentation of competence as an AETB or QI for stationary source testing.', 'Laboratory Accreditation Certification', 'Field Notes', 'Interference/Response Time/Converter Efficiency/Stratification Tests', 'Process and APCD Monitor Calibrations', 'Calibration Gas Certificates (Item 16)', 'Results of audit sample analyses and Audit Provider evaluation reports', and 'Stratification Test'. The 'Stratification Test' row is highlighted in blue and has a count of 0. Below the table, there are instructions for adding and viewing attachments, and tips to reduce PDF file size.

AttachDesc	
Source/Process Flow Diagram	0(0)
Alternate Method Request and Approval (Item 8) (optional)	0(0)
EPA Method 1 Location Supporting Documentation (Item 9) (optional)	0(0)
Cyclonic Flow Absence Supporting Documentation (Item 10)	0(0)
Pre-Test Meter Boxes/DGMs Calibrations	0(0)
Post-Test Meter Boxes/DGMs Calibrations	0(0)
Nozzles Calibrations	0(0)
Pitots Calibrations	0(0)
Thermocouples Calibrations	0(0)
Sampling Locations Dimensions and Point Locations	0(0)
Run Field Data Sheets	0(0)
Moisture Recovery	0(0)
Lab Data	0(0)
Chain-of-Custody	0(0)
Observer Comments	0(0)
Documentation of competence as an AETB or QI for stationary source testing.	0(0)
Laboratory Accreditation Certification	0(0)
Field Notes	0(0)
Interference/Response Time/Converter Efficiency/Stratification Tests	0(0)
Process and APCD Monitor Calibrations	0(0)
Calibration Gas Certificates (Item 16)	0(0)
Results of audit sample analyses and Audit Provider evaluation reports	0(0)
Stratification Test	0(0)
*	0(0)

Record: 14 | 24 of 24 | No Filter | Search

To add or view an attachment:  
- double click on the "paper clip" symbol  
- select "add" to add a file  
- select "view" to view a file

To add more attachment items, enter the description of the attachment in the bottom row of the attachdesc column. Then add your attachment.

Tips to reduce the PDF file size:  
- Create PDF directly from application,  
- Attach individual components not compiled material  
- Use descriptive file names (i.e. M29-field-data\_11-11-11.pdf)  
- Attach compressed image files (JPG, GIF, PNG) or CGM  
- Scan paper documents at 200 dpi

# Switching Gears - CEDRI

- ❑ Much more straight-forward than ERT
- ❑ Performance Test Reports
  - Upload and submit “.zip” file compiled in ERT
- ❑ Notification Reports and Air Emissions Reports
  - Complete *and* submit using CEDRI
  - Available XML schema/Excel templates for certain Subparts for Air Emissions Reports (e.g., CEMS Summary, Malfunction Report, Fuel Use Summary)
    - Not yet developed for petroleum refinery regulations. Estimating draft form available for beta testing by end of 2016.

# Switching Gears – CEDRI Cont.

- ❑ Templates/schema not very descriptive
- ❑ Limited additional guidance
- ❑ Identical to data fields within CEDRI itself

## Example Excel template – Boiler MACT Malfunction Report:

MalfunctionDescription	EquipmentMalfunctionInformation.EventBeginDate	EquipmentMalfunctionInformation.EventBeginTime	EquipmentMalfunctionInformation.EventEndDate	EquipmentMalfunctionInformation.EventEndTime	EquipmentMalfunctionInformation.CorrectiveActionDescription

## Example Excel template – RICE MACT Non-Emergency Use Summary:

RICENonEmergency.BeginDate	RICENonEmergency.BeginTime	RICENonEmergency.EndDate	RICENonEmergency.EndTime	RICENonEmergency.TotalTimeRow	RICENonEmergency.Entity	RICENonEmergency.Situation

# What You Need to Know

- ❑ E-Reporting requirements are applicable upon the compliance date.
- ❑ U.S. EPA continuing to move towards E-Reporting as part of “Next Generation” compliance tactics.
- ❑ E-Reporting is complex, time consuming, and possibly expensive.
- ❑ Reports are also posted on U.S. EPA’s WebFIRE database and **available for public access.**

# What You Need to Know Cont.

- ❑ Reports may be completed omitting confidential business information.
  - A complete report and the confidential information, uploaded to a compact disk or other electronic media, must be mailed to U.S. EPA.
- ❑ States and Locals also have authority to require E-Reporting through ERT/CEDRI even where the Federal rules do not require it.
  - Check with State/Local authorities and permit requirements.



# Questions?

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