



Modernizing the business of environmental protection

Combined Air Emissions Reporting System (CAERS) Reporting Control Devices in CAERS 04/14/2021

Updated 4/20/2021 before posting

Housekeeping:

- This training is being recorded
- Everyone muted, please don't put us on hold
- Type your questions in the chat box
- PPT and recording will be made available on the CAER website

Disclaimer

This training is intended for instructional purposes only. Any data or facility information shown in the training, is illustrative only, and should not be confused with a facility's live report for any given inventory year.

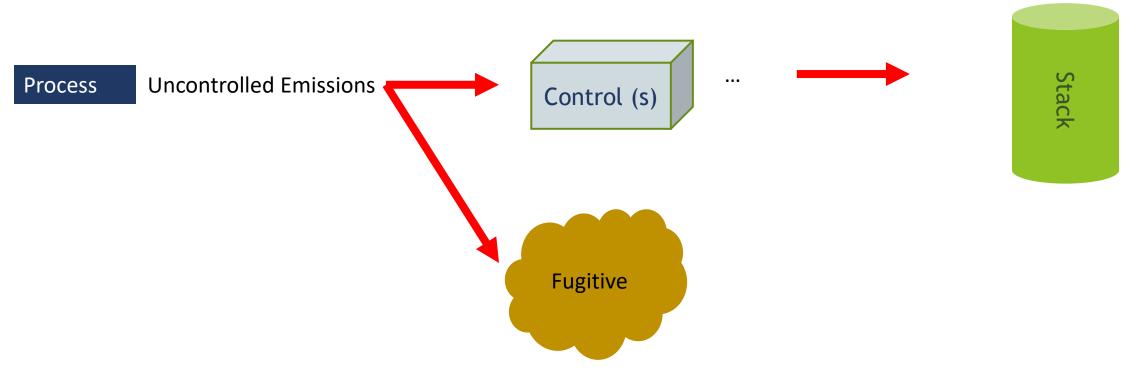
Outline of Training

- New "Path" Approach Concepts
- Examples & How to Enter Data for:
 - No Controls
 - One Control Device
 - More than One Control Device
- Questions & Answers

New "Path" Approach Concepts

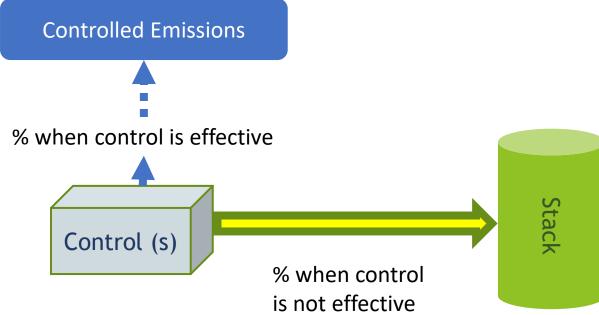
Basic Definitions: <u>Release point</u> apportionment

Percent release point apportionment: The percentage of an exhaust gas stream that is actually collected for routing to a set of control devices. This value could be obtained from the vendor, or measured at the facility. Previous terminology: Percent capture efficiency. Percent captured = Percent going to "stack" type release points. Percent not captured = percent going to "fugitive" release point.



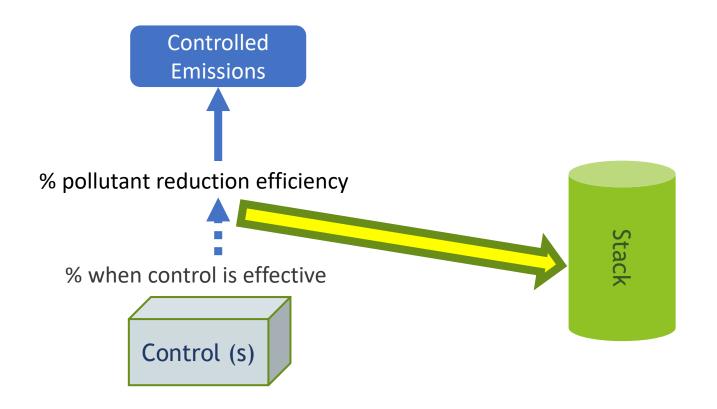
Basic Definitions: Percent Control Effectiveness

Percent control effectiveness: The percentage of time or activity throughput that a control approach is operating as designed, including the capture and reduction devices. This percentage accounts for the fact that controls typically are not 100 percent effective because of equipment downtime, upsets and decreases in control efficiencies. This could be estimated from the amount of time the control is operational, versus down for maintenance or repairs. When the control is not effective, the pollutant is not removed from the emissions stream.



Basic Definitions: Percent <u>Pollutant</u> Reduction Efficiency

Percent Pollutant Reduction Efficiency: The percent reduction achieved for the pollutant when all control measures are operating as designed. This could be obtained from the vendor.



Previously - "Approach Method"

Approach: Contained a collection of controls applied to a unit or process.

- Could contain:
 - Multiple control measures (scrubber, precipitator, etc.), some controls listed could be a "group" of controls
 - Multiple pollutants being controlled with an overall % reduction efficiency reflecting *all* of the control devices in the control approach

Implicit is that every measure controls every pollutant (which we know is not true)

- Overall % capture efficiency, and % effectiveness
- Allowed us to show the overall reduction % for a given process pollutant - release point combination, but not at individual control level

Previously – "Approach Method"

We *couldn't*:

- Describe controls configuration at a facility
- Define the relationship between controls and units, process, and / or release points
- "Reuse" controls that are shared with other components (units, processes, and release points) – i.e. had to enter an approach containing the relevant control for each unit/process/release point combination
- Change the property values of the control information with ease

Previously – "Approach Method"

We *couldn't*:

- Describe controls configuration at a facility
- Define the relationship between controls and units, process, and / or release points
- In reporting data, "reuse" controls that are shared with other components (units, processes, and release points) – i.e. had to enter an approach containing the relevant control for each unit/process/release point combination
- Change the property values of the control information with ease

New – "Path Method"

- A list of individual controls exist for the facility
- Only the pollutants controlled by each individual piece of control equipment are listed with the control. The % reduction for the pollutant is the amount reduced due to this one piece of equipment.
- Control configuration is defined:
 - Single
 - In series
 - In parallel
 - Combinations
- Controls are placed in paths and can be:
 - "Reused" in reporting
 - Associated and linked between a unit/process and a release point

New – "Path Method"

- A Path contains:
 - One or more controls that are connected
 - A child path contains:
 - one or more controls
 - a "smaller" child path containing one or more controls
- A Main Path contains:
 - One or more controls or children paths
 - Associates the controls/paths it contains from a unit/process to a release point

Single Control

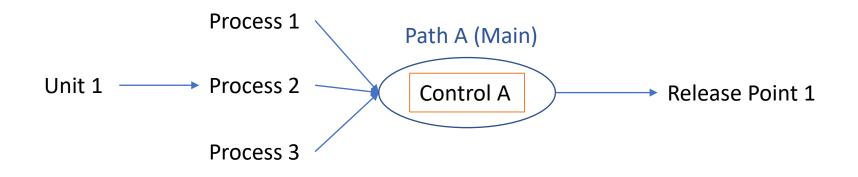
For a single control one path is needed. The control is placed in that path. That path will be the main path and it will associate the process to the release point. Because there's only one control, path assignment is just equal to 1.



Need: pollutant reduction efficiency, effectiveness of control, release point apportionment, path assignment = 1, control apportionment = 100%.

Single Control on Multiple Units/Processes

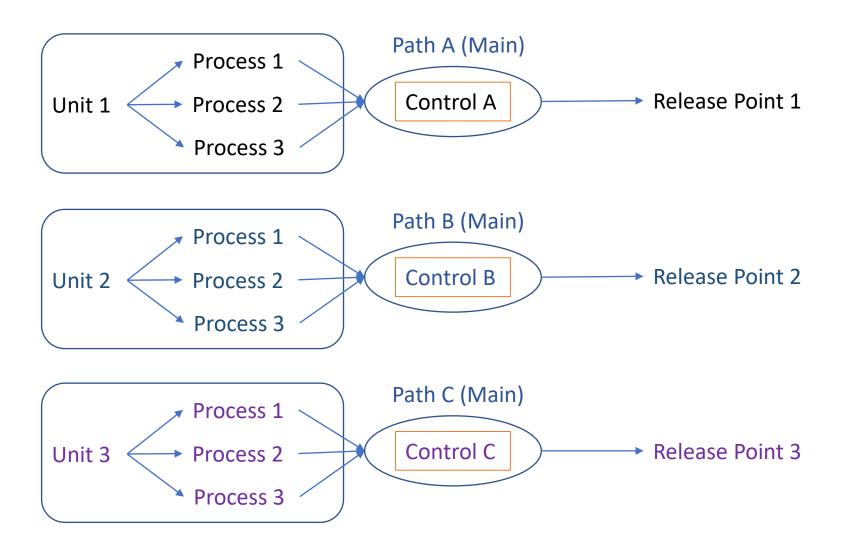
Note that once this path is created for a single control, any process sending emissions to the same release point can use that path. So you only have to set that path up once, then reuse it as needed for each process.



Old Approach method would have required creation of one approach per unit/process/release point combination. New path method "reuses" Path A.

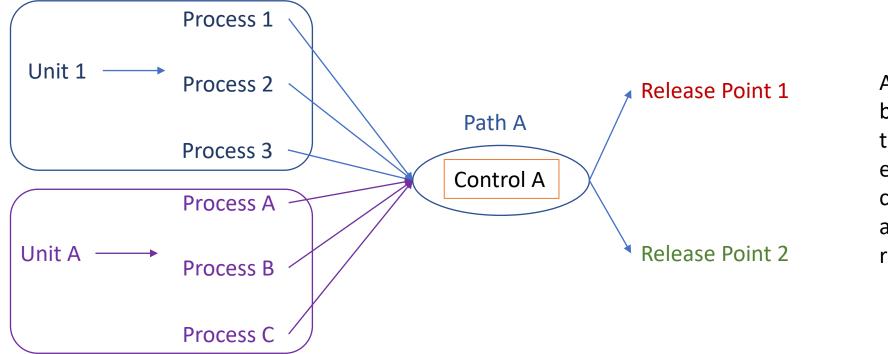
Need: pollutant reduction efficiency, effectiveness of control, release point apportionment, path assignment = 1, control apportionment = 100%.

Multiple "Single Controls"



The case of multiple controls that are "single" controls between a unit/processes and release point is the same as for a single control. One path is created for each control and each path associates the unit/process with the respective release point.

Single Control on Multiple Units/Processes/Release Points

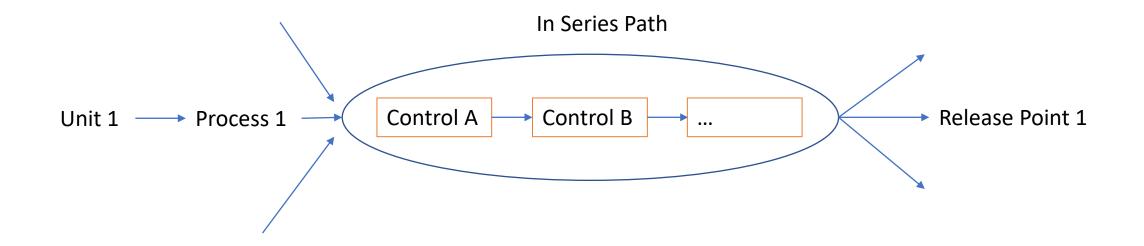


A path can be shared by units/processes if they all direct their emission through the control(s) in that path and also "share" release points

Old Approach method would have required creation of one approach per unit/process/release point combination (6 approaches). New path method "reuses" Path A.

Multiple Controls – In Series

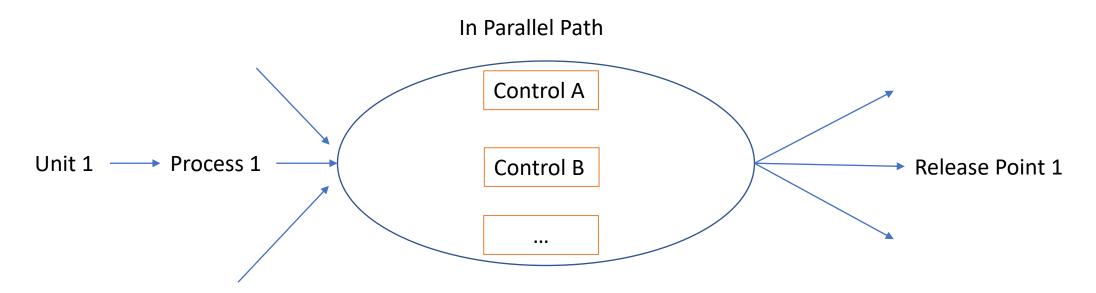
Multiple controls in series can be placed in on path and that path can be reused if it is the main path, as in the previous slide. Instead of a single control, now we have several in series.



Need: pollutant reduction efficiency, effectiveness of control, release point apportionment, *path assignment* (position of control in the sequence; control A=1, Control B=2,...), control apportionment = 100%.

Multiple Controls – In Parallel

Multiple controls in parallel can be placed in on path and that path can be reused if it is the main path, so long as it associates units/processes with the same release point(s).



Need: pollutant reduction efficiency, effectiveness of control, release point apportionment (capture efficiency), path assignment (position of control in the sequence, if parallel, all controls have the same sequence number), control apportionment (e.g. 30% per control).

Additional Definitions

- A **Path Assignment** defines the order in which controls are configured, each control or child path is given a sequence number:
 - Increasing "sequence number" if in sequence
 - The same "sequence number" if in parallel
- Ultimately, there will be a parent or "master" path that will define the controls that are encountered from the emissions generation point (unit/process) to the release point.
 - Movement of emissions from one control to the next will be tracked via the Control Apportionment
 - Capture of the emissions will be tracked via a Release Point Apportionment

Additional Definitions

• Control Apportionment:

- % of the emissions that are coming from a previous control or path
- 100% of the emissions are tracked, a control apportionment percentage < 100% for a control means that some emission are also being routed to another control device or path.

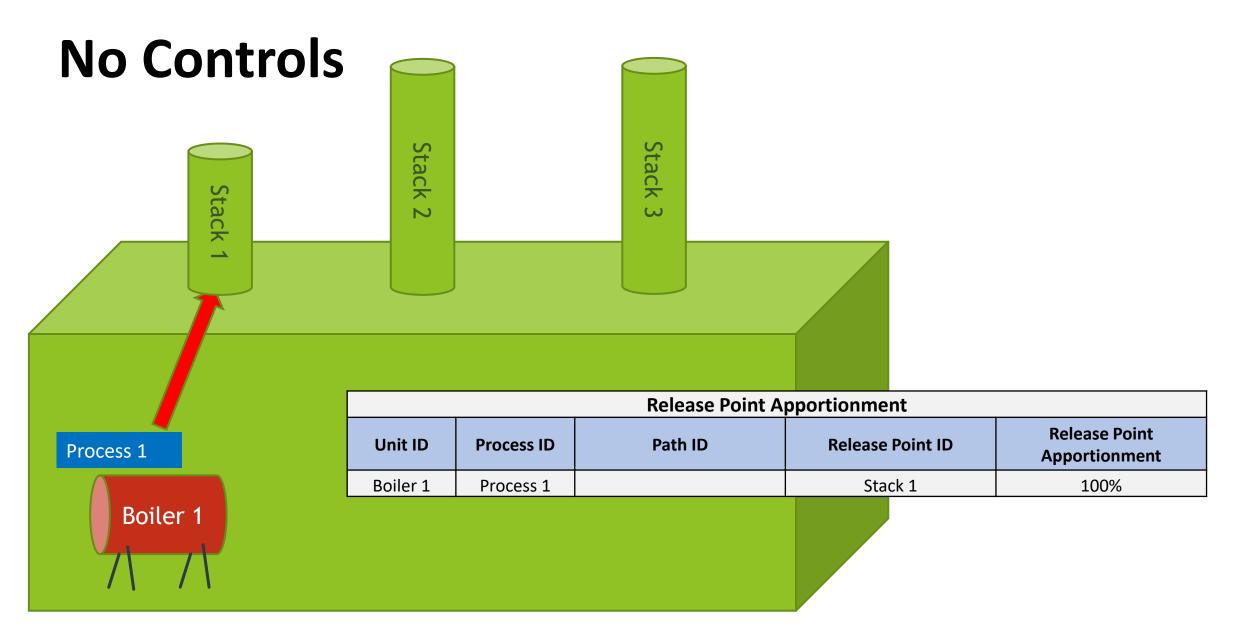
Release Point Apportionment:

- Emissions generated at the unit/process must be accounted for in terms of where they ended up being released:
 - Different types of release points
 - Stack
 - Fugitive
 - 100% of the original emissions must be assigned to one or more release points

Examples & How to Enter Data

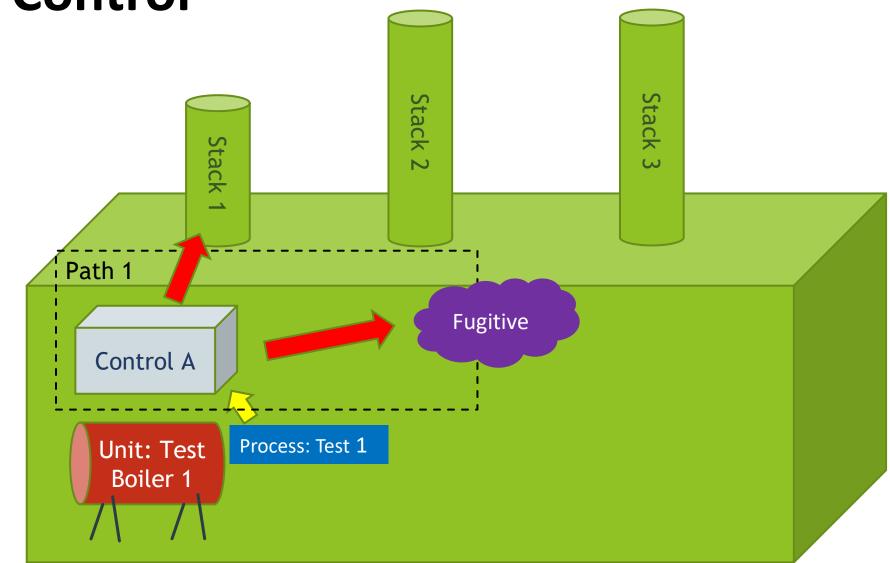
General Steps

- Enter control data (pollutant and % pollutant reduction efficiency)
- Place the control into a path (assignment or sequence #, control apportionment)
 - Control into path
 - Child path into parent path
 - Controls and/or children paths into a main path
- Apportion emissions from the process to the release point



No path needs to be created. You would note a percentage going to stack and a percentage going to fugitives if some of the emissions from the process are fugitive.

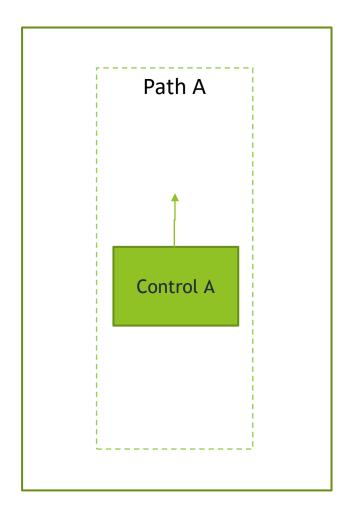
One Control



Numerical Example for One Control

Old Approach Method

Unit ID	Process ID	Control Applicability Level	Control Description	% Capture	% Effectiveness	Control Comment	Pollutant	% Reduction Efficiency
Test Boiler 1	Test 1	PROCESS	Control A	85%	97%	Control approach	NOX	90%



New Path Method

Control Data

	Jointi of Butu	-		-		
C	Control ID	% Effectiveness	Pollutant	% Efficiency	Overall % Reduction	
C	Control A	97%	NOX	90%		74%

Path Data

Path ID	•	U .	Apportionment (Control or Path)
Path A	1	Control A	100%

Release Point

Data

Unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment
Unit 1	Process 1	Path 1	Stack 1	85%
			Fugitive	15%

E.g. Overall% Reduction = apportioned to stack * effectiveness * efficiency = 85% * 97% * 90% = 74.21%

One Control in User Interface

Add New Control in Controls Devices List

Agency ID: 12345678 FACILITY INC 123 Main Street	Report Facility & Emissions Information	Perform Quality Checks		Submit to SLT Authority	Approve	d by SLT Authority
Mytown, GA 12345		с	ontrol Dev	vice Information		
Report Summary	Control ID:	Control A		• Operating Status:	Operating	~
Report History	Ocontrol Measure:	Selective Non-catalytic Reduction (SNCR)	~	Operating Status Year:	2020	
Quality Checks						
Data Bulk Entry	Ocontrol Description:	SNCR For Test Boiler 1 processes				
▼Facility Inventory						1
Facility Information Emissions Units	Control Number Operating Months:	12		Percent Control Effectiveness:		
Release Deintz Control Devices	O Control Start Date:	2018-12-01		Control Upgrade Date:	yyyy-mm-dd	
Control Paths	Ocontrol End Date:	yyyy-mm-dd	=			
★Emissions Inventory						
Boiler 1	Ocontrol Upgrade Description:					
▶ Boiler 2						
Coal Furnace						li)
Spray Booth A Test	Comments:					
Test B Boiler						
▶ Test Boiler 1						17
▶ Test Boiler C						Cancel Save
Turbine 1						
	Note: C	Operating Status Year	n L	JI and Bulk		

Upload starting next Monday

See New Control in List of Controls

Agency ID:12345678 FACILITY INC 123 Main Street	Report Facility & Emissi	ons Information Perform Quality Checks	Submit to SLT Authority	Approved by SLT Authority
Mytown, GA 12345	_		Control Devices	
Report Summary	Control ID	Control Description	Operating Status	
eport History	Control 1	test control 1	Operating	亩
uality Checks	Control 2	test control 2	Operating	â
ata Bulk Entry	Control 3	test control 3	Operating	â
	Control 4	test control 4	Operating	â
Facility Inventory	Control 5	test control 5	Operating	â
Facility Information Emissions Units	Control A	SNCR For Test Boiler 1 processes	Operating	â
Release Points				+
Control Devices 〈 Control Paths				
Emissions Inventory				
Boiler 1				
Boiler 2				
Coal Furnace				
Spray Booth A Test				
Test B Boiler				
Test Boiler 1				
Test Boiler C				
Turbine 1				

Select Control and Add Data

FACILITY INC 123 Main Street Mytown, GA 12345	Control Device Information
Report Summary Report History Quality Checks Data Bulk Entry Facility Inventory Facility Information Emissions Units Release Points Control Devices	Control ID: Control Measure: Control Description: Control Number Op Months: Control Start Date: Control Upgrade Description: Comments:
Control Paths Emissions Inventory Boiler 1 Boiler 2 Coal Furnace Spray Booth A Test Test B Boiler	Identifier Save Cancel
 Test Boiler 1 Test Boiler C Turbine 1 	Paths Associated with this Control Path Identifier Path Description

Create Path for Control in Path List

Agency ID:12345678 FACILITY INC	Report Facility & Emissions Info	prmation Perform Quality (Checks Submit to SLT	Authority	Approved by SLT Authority
123 Main Street Mytown, GA 12345			Control Path Information		
Report Summary Report History	Path ID:	Path A	Percent Control Effectiveness:	97	
Quality Checks Data Bulk Entry	Path Description:	Test Boiler 1 Test 1			
 Facility Inventory Facility Information Emissions Units Release Points Control Paths Control Paths Emissions Inventory Boiler 1 Boiler 2 Coal Furnace Spray Booth A Test Test Boiler 1 Turbine 1 	it is, you shou Percent Redu	uld check your PM nur	d, if you submit your renders. PM 10 and 2.5: 10 on a control or path	Error if	Cancel Save

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See New Path in List of Paths

Agency ID:12345678 FACILITY INC 123 Main Street	Report Facility & Emissions Information	Perform Quality Checks	Submit to SLT Authority	Approved by SLT Authority
Mytown, GA 12345		Contro	l Paths	
Report Summary	Path Id	Path Description		
Report History	Path 1	test path 1		â
Quality Checks	Path 2	test path 2		â
Data Bulk Entry	Path 3	test path 3		â
	Path 4	test path 4		â
 Facility Inventory 	Path 5	test path 5		â
Facility Information Emissions Units	Path A	Test Boiler 1 Test 1		â
Release Points				+
Control Devices Control Paths				
Emissions Inventory				
Boiler 1				
Boiler 2				
Coal Furnace				
Spray Booth A				
Test > Test B Boiler				
Test Boiler 1				
Test Boiler C				
Turbine 1				

Select Path and Add Data

Agency ID:12345678 FACILITY INC	Report Facility & Emissions Information Pe		Perform Quality C	Perform Quality Checks		Submit to SLT Authority		Approved by SLT Aut	thority
123 Main Street Mytown, GA 12345				Control Path Inform	nation				Edit
Report Summary	Path ID:	1	Path A	Percent Control	97				
Report History				Effectiveness:					
Quality Checks	Path Description:		Test Boiler 1 Test 1						
Data Bulk Entry		Control Path Ass	ignment				Control Path	Pollutants	
-Facility Inventory									
Facility Information Emissions Units	Sequence Number	Assignment	% Apportionment		Pollutant Name	Code	CASID	% Reduction Efficiency	
Release Points				+					+
Control Devices									
Control Paths									
Emissions Inventory									
Boiler 1									
▶ Boiler 2									
Coal Furnace									
Spray Booth A Test									
 Test B Boiler 									
Test Boiler 1									
▶ Test Boiler C									
Turbine 1									

Control Path Assignment Data

Agency ID:12345678 FACILITY INC	Report Facility & Em	issions Information	Perform Quality Checks	Submit to SLT Auth	ority Approved by SLT Authority
123 Main Street Mytown, GA 12345		Control Path Assignn	nent		Edit
Report Summary	Path ID:	• Enter the Sequence Numbe	r 1		
Report History	Path Description:	You must select either a Contract of the select either a Contract	ntrol or a Control Path:		
Quality Checks	Path Description.	Control	Control Path		
Data Bulk Entry		Control A	~	~	Control Path Pollutants
✓Facility Inventory					
Facility Information	Sequence Number	O Enter the Apportionment P	ercentage 100		CAS ID % Reduction Efficiency
Emissions Units Release Points					+
Control Devices Control Paths				Save Cano	
✓Emissions Inventory					
Boiler 1					
► Boiler 2					
Coal Furnace Spray Booth A					
Test					
▶ Test B Boiler					
Test Boiler 1					
▶ Test Boiler C					
▶ Turbine 1					

Control Path Pollutants

Spray Booth A

Test Boiler 1

Test Boiler C

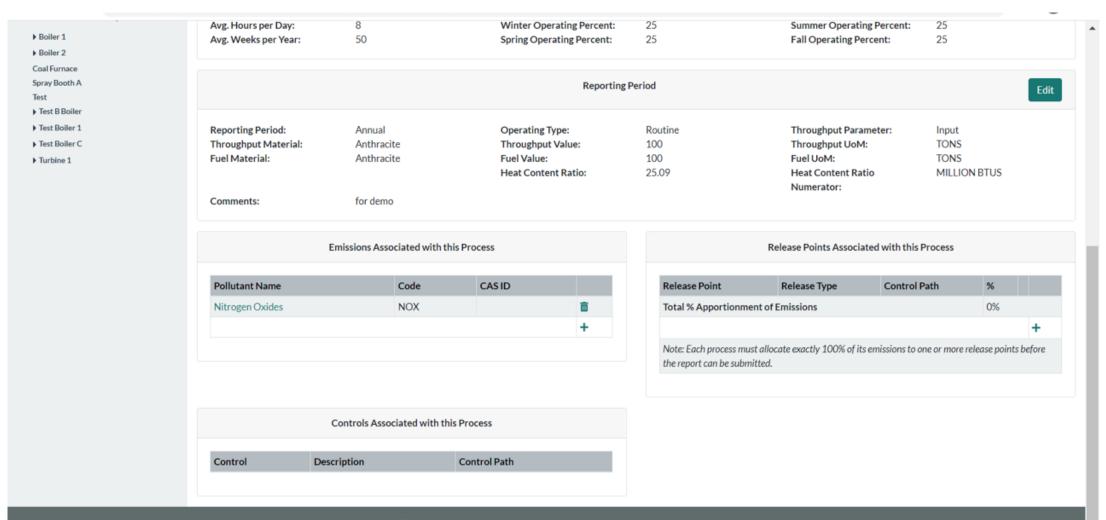
Test • Test B Boiler

My Facilities > Emissions Reports > 2020 Emissions Report <u>Help</u> Report Facility & Emissions Information Perform Quality Checks Submit to SLT Authority Approved by SLT Authority Agency ID:12345678 FACILITY INC 123 Main Street **Control Path Information** Mytown, GA 12345 Edit **Report Summary** 97 Path ID: Path A Percent Control **Report History** Effectiveness: Path Description: Test Boiler 1 Test 1 **Quality Checks** Data Bulk Entry **Control Path Pollutants Control Path Assignment** Facility Inventory Facility Information Sequence Number Assignment % Apportionment **Pollutant Name** Code CAS ID % Reduction Efficiency **Emissions Units** m 90 1 Control A 100 Nitrogen Oxides NOX Ľ **Release Points** Control Devices + Control Paths Emissions Inventory Boiler 1 Path % Reduction Efficiency Boiler 2 For one control, or several controls for different pollutants each, the path pollutant control • **Coal Furnace**

- For one control, or several controls for different pollutants each, the path pollutant control
 efficiency is the same as for each of those controls, but,
- If there is more than one control for a given pollutant, then that becomes an estimate of efficiency of pollutant removal of all those controls, for that specific pollutant.

▼

Select the Process for the Control



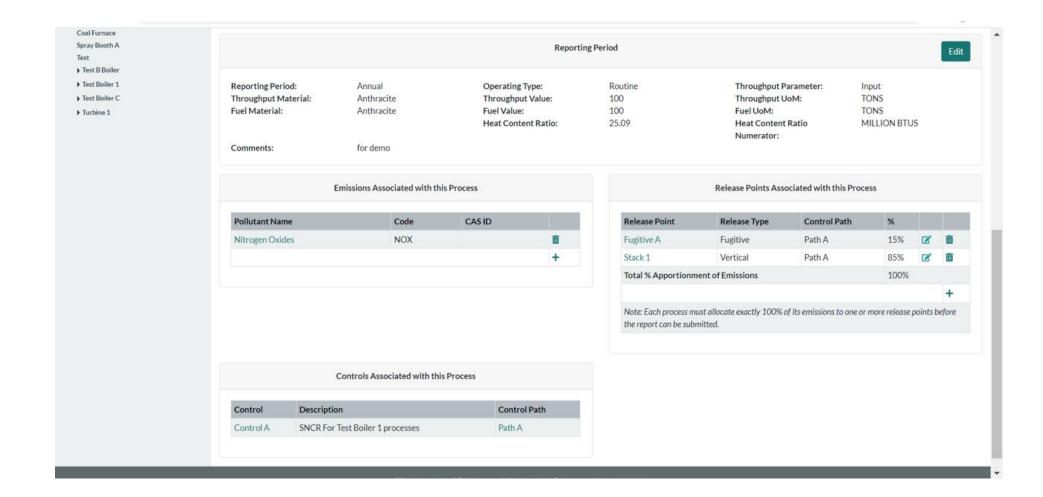
Select Release Point

▶ Boiler 1	Avg. Hours per Day: Avg. Weeks per Year:	8 50	Winter Operating Percent: Spring Operating Percent:	25 25	Summer Operating Percent: Fall Operating Percent:	25 25	
oiler 2	Avg. Weeks per teat.	50	spring operating recent.	23	ran operating rettent.	23	
al Furnace ray Booth A st			Reporting	g Period			Edit
Test B Boller Test Boller 1 Test Boller C Turbine 1	Reporting Period: Throughput Material: Fuel Material: Comments:	Annual Anthracit Anthracit Select	a Release Point a Release Point a Control Path (optional)	~	Throughput Parameter: Throughput UoM: Fuel UoM: Heat Content Ratio Numerator:	Input TONS TONS MILLION BTUS	
		Emissions Asso	er the Emission Percentage		Release Points Associated with th	is Process	
	Pollutant Name		s	Save Cancel nt	Release Type Contro	ol Path %	
	Nitrogen Oxides	NUX		Iotal % Apportio	nment of Emissions	0%	
			+				+
				Note: Each process the report can be s	must allocate exactly 100% of its emissions to ubmitted.	o one or more release po	ints before
		Controls Associated wit	h this Process				
	Control De	escription	Control Path				
		EPA Ho	ne MyCDX Accessibility Notice Privacy an	d Security Notice			

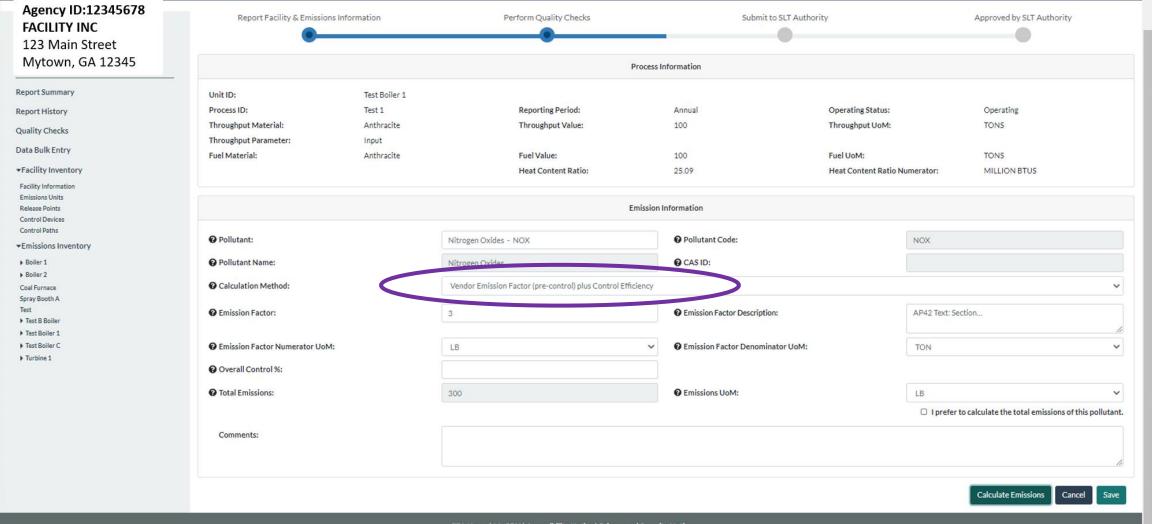
Associate Process and Release Point

Spray Booth A Test + Test B Boiler				Reporting Po	eriod						Edit
Test Boiler 1 Test Boiler C Turbine 1	Reporting Peri Throughput M Fuel Material: Comments:		Operating Ty Release Point Apportion Select a Release Point Fugitive A - Fugitive Building A		Routine	Thro Fuel Heat	ughput Pa ughput Uo UoM: Content F erator:	M:	Input TONS TONS MILLION BTU	JS	
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				Sav	e Cancel	ortionment of Emissio	ns		85%		
				2		rocess must allocate exac n be submitted.	tly 100% o	f its emissions to on	e or more releas	e points	+ s before
		Controls Asso	ciated with this Process								
	Control	Description	Control	Path							
	Control A	SNCR For Test Boiler 1 p	rocesses Path A								
			EPA Home MyCDX Accessibility N	otice Privacy and S	Security Notice						

See Release Point(s) Linked to Process by Path



Can Use Post-Control Emission Factor



Can Use Pre-Control Emission Factor

Quality Checks	Throughput Material: Throughput Parameter:	Anthracite Input	Throughput Value:	100	Throughput UoM	I: TONS	^
Data Bulk Entry	Fuel Material:	Anthracite	Fuel Value:	100	Fuel UoM:	TONS	
▼Facility Inventory			Heat Content Ratio:	25.09	Heat Content Rat	tio MILLION BTUS	
Facility Information Emissions Units Release Points Control Devices			Emissio	n Information	Numerator:		
Control Paths							
-Emissions Inventory	Pollutant:		Nitrogen Oxides - NOX	Pollutant Code:		NOX	
 Boiler 1 Boiler 2 	Pollutant Name:		Nitrogen Oxides	CAS ID:			
Coal Furnace Spray Booth A	Calculation Method:		USEPA Emission Factor (no Control Efficience	y used)			~
Test ▶ Test B Boiler ▶ Test Boiler 1						Search for Emission Fa	ctor
 Test Boiler C Turbine 1 	Emission Factor:		3	Emission Factor Description	on:	This factor was present in AIRS Facility Subsystem Source Classification Codes	
	C Emission Factor Numerator	r UoM:	LB ~	Emission Factor Denomin	nator UoM:	TON	~
•	Overall Control %:		74				- 1
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	Comments:						
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Emissions Canaal Sau

One Control in Bulk Upload

Enter Data in Control Devices Tab

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9	aths. Ids that should not be changed if they existed s year should not be deleted, but instead, the	in a previous submission. user should change their operating status to "Pe	ermanently Shutdown".					
1	Description of the control equipment.	Estimated percent of the reporting period's activity for which the overall control system or approach (including both capture and control measures) were operating as designed (regardless of whether the control measure is due to rule or voluntary).	Drop down. Code that identifies the operating status of the control measure.	Year the current operating status came into effect.	Drop down. Control measure code.	The number of months per year the control operates.	Day the control was made effective.	The date on which t was most recently u
1	Control Description*	Percent Control Effectiveness	Operating Status*	Operating Status Year	Control Measure*	Control Number Operating Months	Control Start Date	Control Upgrade Dat
1	Acetaldehyde and Benzene Control	50	Operating	1985	Wet Scrubber - High Efficiency		2 2019-10-3	
1	Acetaldehyde Control	75	Operating	1985	Wet Scrubber - Medium Efficiency			
1	NOX Capture Device	71	Operating	1985	Gas Scrubber (General, Not Classified)			
1	test control 1	25	Operating	2000	Afterburner			
1	test control 2	25	Operating	2000	Adsorption - Activated Carbon or other			
1	test control 3	25	Operating		Air Injection			
t	test control 4	25	Operating	2000	Internal Floating Roof			
t	test control 5		Operating		Screen			
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Enter Data in the Control Paths Tab

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4	Ensure that data copie	ed into cells is in the correct format and is	devoid of spaces, quotation marks and other characters.	
5	Note there are hidden	columns in this worksheet. Please do no	alter hidden columns, as these are important for data validations.	
6	You should enter all c	ontrol path information before assigning t	em to other paths or associating them with processes and release points.	
7				
8	Tab: Control Paths			
9	Instruction:	Identifier of the control path, given by the facility.	Description of the control path.	Estimated percent of the reporting period's activity for which the overall control system or approach (including both capture and control measures) were operating as designed (regardless of whether the control measure is due to rule or voluntary).
0	Field	Path ID*	Path Description*	Percent Control Effectiveness
14	example entry	Primary	Primary Control Flow	50
15		Secondary	Secondary Control Flow	75
24		Path 1	test path 1	2
25		Path 2	test path 2	3
6		Path 3	test path 3	4
27		Path 4	test path 4	5
28		Path 5	test path 5	6
29		Path A	Test Boiler 1 Test 1	97
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33				
4	Instructions	Facility Contacts NAICS Release Poir	s Emission Units Emission Processes Control Devices Control Paths Control Assignments Control	Device Pollutants (+) :
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Enter Data in the Control Assignments Tab

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-															
1	Tab: Control Assignment														
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		Drop down. Select the name	Dron down Control assigned	Drop down. Child path assigned		previous control or path in the	1								
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					path.	control or path.									
ī	Field	Path ID*	Control ID	Control Path (Child)	Sequence Number*	Percent Apportionment*	-								
	example entry	Primary	NOX Control			75	5								
		Primary		Secondary		25	5								
5		Secondary	Control 001			100	5								
1		Secondary	Control 002			2 100	ō								
F		Path 1	Control 1			L 50	ō								
5		Path 1		Path 2		L 50	٥								
5		Path 2	Control 2		:	L 50	٥								
7		Path 2		Path 3	:	L 50	٥								
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8															
	Instructions	Facility Facility Contacts	NAICS Release Points E	mission Units Emission Process	es Control Devices	Control Paths Control Assignments	ĺ	Control Device Pollutants	Control Device Pollutants (+) : (Control Device Pollutants (+) :	Control Device Pollutants (+)	Control Device Pollutants (+)	Control Device Pollutants	Control Device Pollutants (+)	Control Device Pollutants (+)
							-	U							
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Enter Data in the Control Device Pollutant Tab

	A	D	E	G						
2		neral" except where specified.	r	0	ł					
			d is devoid of spaces, quotation marks and	other characters						
			not alter hidden columns, as these are in							
		ssigning them pollutants.	not alter moden columns, as tilese are in	iportant for data validations.						
7	create controis before a	issigning them pollutants.								
8	Tab: Control Device Pol	lutants								
^	Tab. Condor Device Pol				-					
	Instruction:	Drop down. Control ID for the equipment that is controlling the	Drop down. Pollutant the equipment	Efficiency with which the control removes						
9	instruction.	pollutant.	controls.	the pollutant.						
-	Field	Control ID*	Pollutant Name*	Percent Reduction Efficiency	- 1					
	example entry	Control 001	Acetaldehyde	99.9	5					
15	í	Control 002	Benzene	99.9						
16		Control 001	Acetaldehyde	5.3						
17		NOX Control	Nitrogen Oxides	5.3						
24		Control 1	1,1,2,2-Tetrachloroethane	25						
25		Control 2	Carbon Dioxide	99.9						
26		Control 3	Carbon Monoxide	98.999						
27		Control 4	Nitrogen Oxides	50.000						
28		Control 5	Diethylene Glycol Monovinyl Ether	99.899	5					
29		Control A	Nitrogen Oxides	90	-					
30					-					
31										
32										
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40	Instructions	Facility Facility Contacts	NAICS Release Points Emission Units	Emission Processes Control Devices		entrol Paths Control Assign	netral Bethe Control Assignments Control Device Pollutante	netral Pathe Control Assignments Control Device Pollutante	nated Bathe Control Assignments Control Davice Pollutants	antral Bathe Contral Arrianmente Contral Device Pollutante
	instructions	Facility Facility Contacts	Release Points Emission Units	Emission Processes Control Devices	9	ontrol Paths Control Assign				
							Average: 49.33333333 Count: 6 Sum: 148	Average: 49.3333333 Count: 6 Sum: 148 🖙 Display Settings	Average: 49.3333333 Count: 6 Sum: 148 🖙 Display Settings 🌐 🗐	Average: 49.33333333 Count: 6 Sum: 148 🖙 Display Settings 🌐 💷 🗕

Enter All Pollutants if More than One

1	A		D		F		G											
	All field formats are "Ger																	
	Ensure that data copied i																	
	Note there are hidden co			not alter hidder	n columns, as these are	important for data	validations.											
5	Create controls before as	signing them pollut	tants.															
7																		
8	Tab: Control Device Pollu																	
	Instantion	Drop down. Contr		Drop down. P	ollutant the equipment	Efficiency wi	th which the cont	rol removes										
	Instruction:	equipment that is pollutant.	controlling the	controls.		the pollutant												
9	Field	Control ID*		Pollutant Nan	no*	Dercent Ded	uction Efficiency											
	example entry	Control 001		Acetaldehyde	ne	Fercent Red	uction Enclency	99.9										
15		Control 001		Benzene				99.9										
16		Control 002		Acetaldehyde				5.3										
17		NOX Control		Nitrogen Oxide	es estatution de la constatution de			5.3										
24		Control 1		1,1,2,2-Tetrac				25										
25		Control 2		Carbon Dioxid				99.9										
26		Control 3		Carbon Mono	xide			98.999										
27		Control 4		Nitrogen Oxid	les			5										
28		Control 5		Diethylene Gl	ycol Monovinyl Ether			99.899										
29		Control A		Nitrogen Oxid	ies			90										
30		Control A		Toluene				30										
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Enter Data in the Apportionment Tab

	А	D	F	Н	I	
18		Smokestack 2	Disposal Process		40	
19		Vent 1	Storage Process		10	
20		Smokestack 1	Storage Process		20	
21		Smokestack 2	Storage Process		70	
24		Coal Handler	Turbine 1-1		50	
25		Fugitive A	Test Boiler 1-Test 1	Path A	15	
26		Scrubber 1	Turbine 1-1		50	
27		Stack 1	Boiler 2-Different 3	Path 1	100	
28		Stack 1	Test Boiler C-Test C process 1		100	
29		Stack 1	Boiler 2-1	Path 1	100	
30		Stack 1	Boiler 2-Duplicate 2	Path 1	100	
31		Stack 1	Test Boiler 1-Test 1	Path A	85	
32		Stack 1	Test B Boiler-Test B process	Path A	100	
33		Stack 2	Boiler 1-Different 2	Path 2	100	
34		Stack 2	Boiler 1-Duplicate 1	Path 2	100	
35		Stack 2	Boiler 1-1	Path 2	100	
36		Stack 2	Boiler 1-Different 1	Path 2	100	
37						
38						
39						
40						
41						
42						
43						
•	Control Path Pollutants	Apportionment Reporting Period Operat	ing Details Emissions Emission Formula Variabl		CalculationMaterialCode (+) : (4)	
				Ave	erage: 33 Count: 16 Sum: 330 🗔 Display Settings 🛛 🎚	

Ensure Process Lists Pollutants

	А	С	E		F	G		Н	I	J	К
36		Boiler 2-1-Annual	PM2.5 Filterable		false		190 LB			1.9 (AP42 Text: Section 1.4) EPA. March, 1998. Sectior
37		Boiler 2-1-Annual	Sulfur Dioxide		false		60 LB			0.6 (AP42 Text: Section 1.4) EPA. March, 1998. Sectior
38		Boiler 2-1-Annual	Volatile Organic Compound	ds	false		550 LB			5.5 (AP42 Text: Section 1.4) EPA. March, 1998. Sectior
39		Boiler 2-Different 3-An	nua Carbon Monoxide		false		100 TON		5	0	
40		Boiler 2-Duplicate 2-An	nua Carbon Dioxide		false		100 TON		5	0	
41		Test B Boiler-Test B pro	ces Nitrogen Oxides		false		0.033 LB			0.33	Acme company boiler emission factor
42		Test Boiler C-Test C pro	ces Nitrogen Oxides		false		300 LB			0 3 1	This factor was present in AIRS Facility Subsystem
43		Turbine 1-1-Annual	Arsenic		true		52 LB			0.00041	EPA. September, 1998. Section 1.1, Bituminous ar
44		Turbine 1-1-Annual	Carbon Monoxide		false	3.8596	59E-05 TON			0.003 (AP42 Text: Section 1.3) EPA. September, 1998. Se
45		Turbine 1-1-Annual	Diethylene Glycol Dinitrate	2	false		4.545 TON				
46		Turbine 1-1-Annual	PM10 Filterable		true		200 LB			(AP42 Text: Section 1.1) EPA. September, 1998. Se
47		Turbine 1-1-Annual	PM10 Primary (Filt + Cond)		true		250 TON			0.012 (AP42 Text: Section 1.3) EPA. September, 1998. Se
48		Turbine 1-1-Annual	PM2.5 Primary (Filt + Cond))	false	0.0001	54387 TON			0.012 (AP42 Text: Section 1.3) EPA. September, 1998. Se
49		Turbine 1-1-Annual	Selenium		true		0.13 LB			0.0013 (AP42 Text: Section 1.1) EPA. September, 1998. Se
50		Turbine 1-1-Annual	Sulfur Dioxide		false		9.5 TON			0	
51		Turbine 1-1-Annual	Volatile Organic Compound	ds	true		140 LB			12 (AP42 Text: Section 1.1)
52		Test Boiler 1-Test 1-Ani	nua Nitrogen Oxides		false		300 LB			3 /	AP42 Text: Section
53		Test Boiler 1-Test 1-Ani	nualToluene		false		10 LB				
54											
55											
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57							Entor	emissio	nc or		
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- + - +	I Path Pollutants	Apportionment	Reporting Period Operatin	g Details Emis	sions Emission Formula Varia	bles Worksheet Map A	ircraftEngineTypeCo	de Calculation	/aterialCode CalculationMe	etho 🕂 🗄 📢	4
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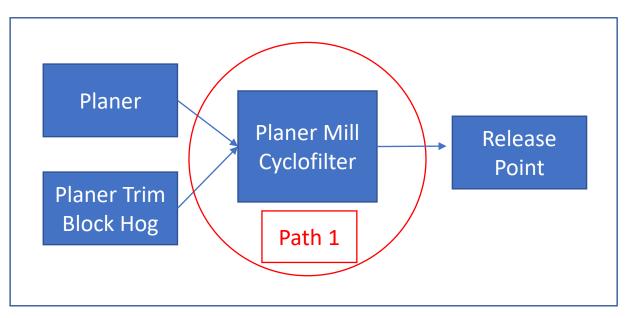
List Overall % if Applicable

A	C	E	F	G	Н	I J	К
	Boiler 1-Different 1-An	iua Benzene	false	100 TON		50	
	Boiler 1-Different 2-An	ua Carbon Monoxide	false	1 TON			
	Boiler 1-Duplicate 1-An	nua 1,1,2,2-Tetrahydroperfluoro-1-octadecanol	false	100 TON		50	
	Boiler 2-1-Annual	Carbon Monoxide	false	8400 LB		84 (AP4)	2 Text: Section 1.4) EPA. March, 1998. Sectio
	Boiler 2-1-Annual	Nitrogen Oxides	false	28000 LB		280 (AP4)	2 Text: Section 1.4) EPA. March, 1998. Section
	Boiler 2-1-Annual	PM10 Filterable	false	190 LB		1.9 (AP4)	2 Text: Section 1.4) EPA. March, 1998. Section
	Boiler 2-1-Annual	PM2.5 Filterable	false	190 LB		1.9 (AP4)	2 Text: Section 1.4) EPA. March, 1998. Section
	Boiler 2-1-Annual	Sulfur Dioxide	false	60 LB		0.6 (AP4)	2 Text: Section 1.4) EPA. March, 1998. Secti
	Boiler 2-1-Annual	Volatile Organic Compounds	false	550 LB		5.5 (AP4)	2 Text: Section 1.4) EPA. March, 1998. Secti
	Boiler 2-Different 3-An	ua Carbon Monoxide	false	100 TON		50	
	Boiler 2-Duplicate 2-An	nua Carbon Dioxide	false	100 TON		50	
	Test B Boiler-Test B pro	es Nitrogen Oxides	false	0.033 LB		0.33 Acme	company boiler emission factor
	Test Boiler C-Test C pro	es Nitrogen Oxides	false	300 LB		0 3 This f	actor was present in AIRS Facility Subsyste
	Turbine 1-1-Annual	Arsenic	true	52 LB		0.00041 EPA.	September, 1998. Section 1.1, Bituminous
	Turbine 1-1-Annual	Carbon Monoxide	false	3.85969E-05 TON		0.003 (AP4)	2 Text: Section 1.3) EPA. September, 1998.
	Turbine 1-1-Annual	Diethylene Glycol Dinitrate	false	4.545 TON			
	Turbine 1-1-Annual	PM10 Filterable	true	200 LB		(AP4)	2 Text: Section 1.1) EPA. September, 1998.
	Turbine 1-1-Annual	PM10 Primary (Filt + Cond)	true	250 TON			2 Text: Section 1.3) EPA. September, 1998.
	Turbine 1-1-Annual	PM2.5 Primary (Filt + Cond)	false	0.000154387 TON		0.012 (AP4)	2 Text: Section 1.3) EPA. September, 1998.
	Turbine 1-1-Annual	Selenium	true	0.13 LB		0.0013 (AP4)	2 Text: Section 1.1) EPA. September, 1998.
	Turbine 1-1-Annual	Sulfur Dioxide	false	9.5 TON		0	
	Turbine 1-1-Annual	Volatile Organic Compounds	true	140 LB			Toxt: Section 1.1)
	Test Boiler 1-Test 1-Anr	ual Nitrogen Oxides	false	300 LB			Text: Section
_	Test Boiler 1-Test 1-Anr	ualToluene	false	10 LB		25	
						^	
						Enter overall % here and	
							•
						emissions, or recalculate	IN
						User Interface.	
 → … Control 	Assignments Control Dev	ice Pollutants Control Path Pollutants A	pportionment Reporting Period	Operating Details Emissions	Emission Formula V	ariables Worksheet Map AircraftEn (+) :	
	Control Dev	control Paul Polidiants A	Reporting Period	operating betails	emission ronnula v	And all and a second and a seco	

Considerations to Keep in Mind

- Please don't re-label or delete controls that existed in a previous year report, instead, mark them as "Permanently Shut Down" or your inventory in EPA will be out of sync. Seeking input on when/how/why facilities relabel components, send to <u>caer@epa.gov</u>.
- You could enter your control data in UI to help guide you, then download in BU template to continue the rest of your report and viceversa.
- If you enter a control device you must also enter its: pollutant reduction efficiency, effectiveness, release point apportionment, and path assignment

Real Example 1



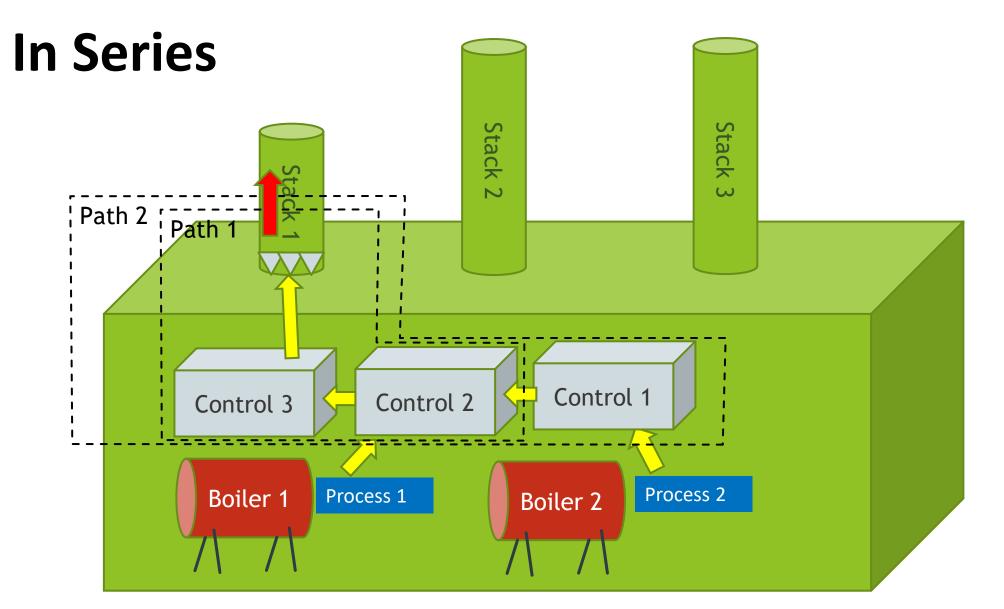
		Path Data					
Path ID	Sequence Number	Control or Child Path Assignment	Assigned Control or Child Path Apportionment				
Path 1	1	1Planer Mill cyclofilter 100%					

	Control Data									
Unit ID Process ID Path ID Release Point ID Release Point										
				Apportionment						
Planer	Process 1	Path 1	Stack 1	100%						
Planer Trim Block Hog	Process 2	Path 1	Stack 1	100%						

In this example we have two processes sending emissions into the Planer Mill Cyclofilter. Path 1 can be the main path for the single control and can be used for both processes.

One Control Device Q&A

More than One Control



Controls 1, 2, 3, and 4 are set up in sequence. Boiler and Process 2 send emissions to control 1. Boiler and process 1 send emissions to control 2. Path 1 is the main path between Boiler and Process 1 to Stack 1. Path 2 is the main path between boiler and process 2 and stack 1. Path 1 is a "child" path of Path 2. Path 2 is a "main" path.

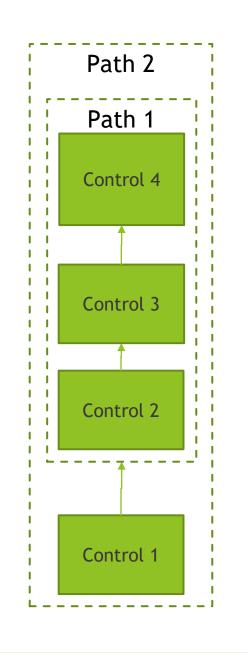
Control 4

Numerical Example for Controls in Series

Old Approach Method

	Process ID		Control Description	% Capture	% Effectiveness	Control Comment	Pollutant	% Reduction Efficiency
			Control			Control		
Boiler 2	Process 2	PROCESS	approach name	100%	91%	approach	VOC	80%
							со	95%
							PM10-PRI	90%
							PM-CON	100%
							NOX	90%
							SO2	90%

For Boiler 1 you might have a separate approach similar to this one but excluding Control 1.



New Path Method

Control Data	ontrol Data										
Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	Overall % Reduction						
Control 1	100%	95%	voc	80%	76%						
			со	95%	90%						

Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	Overall % Reduction
Control 2	100%	90%	PM10-PRI	90%	81%
			PM-CON	100%	90%

Cont	rol ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	Overall % Reduction
Control	3	100%	90%	NOX	90%	81%

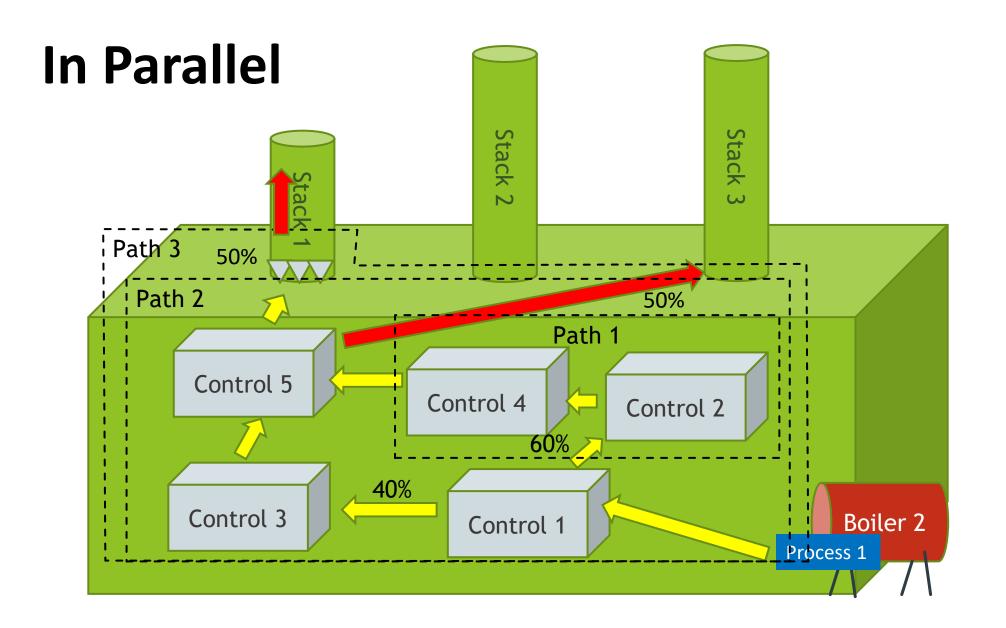
Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	Overall % Reduction
Scrubber 1	100%	90%	SO2	90%	81%

Path Data

Path ID	Sequence Number	Assignment (Control or Path)	Apportionment (Control or Path)
Path 1	1	Control 2	100%
Path 1	2	Control 3	100%
Path 1	3	Scrubber 1	100%
Path 2	1	Control 1	100%
Path 2	2	Path 1	100%

Release Point Data

Data								
Unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment				
Boiler 1	Process 1	Path 1	Stack 1	100%				
Boiler 2	Process 2	Path 2	Stack 1	100%				



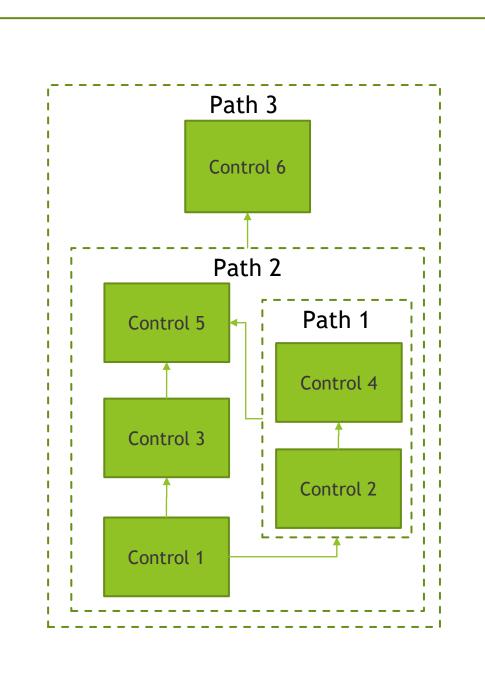


Path 1 is a child path of Path 2. Path 2 is a "main path" between the process and Stack 3. Path 2 is a child path of Path 3. Path 3 is a "main path" between the process and Stack 1.

Numerical Example for Controls in Parallel

Old Approach Method

Unit ID	Process ID	Control Applicability Level	Control Description	% Capture	% Effectiveness	Control Comment	Pollutant	% Reduction Efficiency
			Control					
Boiler 2	Process 2	PROCESS	approach name	94%	93%	Control approach	VOC	80%
							PM10-PRI	90%
							PM-CON	100%
							со	95%
							NOX	99%
							Pb	95%
							SO2	97%



New Path Method

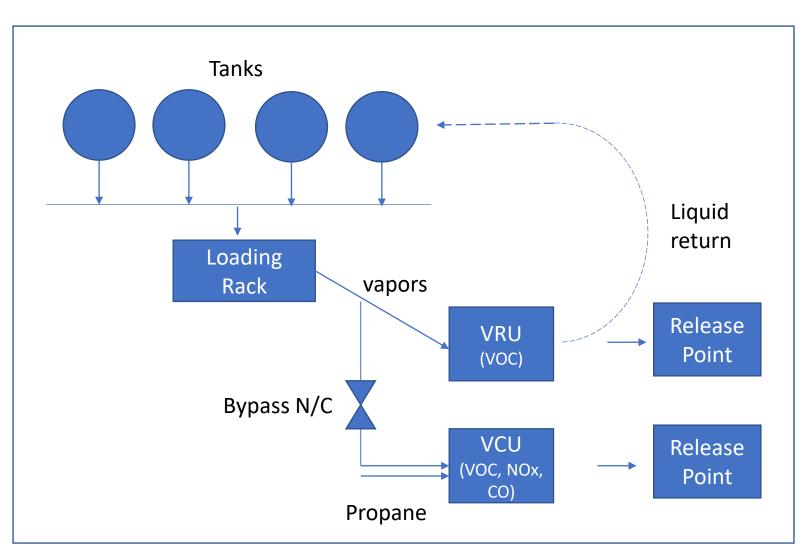
Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	
				-	Overall % Reduction
Control 1	90%	۶ 9	5%VOC	80%	68
Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	Overall % Reduction
Control 2	100%	í 9	0%PM10-PRI	90%	8
			PM-CON	100%	9
Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	Overall % Reduction
Control 3	100%	í 9	0%CO	95%	8
Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	
Control 4	80%	· · · · · · · · · · · · · · · · · · ·	5%NOX	99%	Overall % Reduction 7
	80%	92		55/0	1
Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	
				-	Overall % Reduction
Control 5	95%	<u>و</u> 9	0%Pb	95%	8
Control ID	R.P. Apportiont.	% Effectiveness	Pollutant	% Efficiency	
				-	Overall % Reduction
Scrubber 1 Path Data	100%	99	8%SO2	97%	9
Path ID	Sequence Number	Assignment (Control or Path)	Apportionment (Control or Path)	Averag	e path release
Path 1	1	LControl 2	1009	-	pportionment
Path 1		Control 4	1009		
Path 2		Control 1	2007	1 94%, co	ould be weighted
Path 2	2	Control 3	409	average	e or other as
Path 2	2	Path 1	609		
Path 2	3	Control 5	1009	estima	ted by the facility
Path 3	1	LPath 2	1009	e reporte	er 🛛
Path 3	2	Scrubber 1	1009		/
Release Point Data					
unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment	
				/	
	D				
Boiler 2 Boiler 2	Process 1 Process 1	Path 2 Path 3	Stack 3 Stack 1	47%	
	1 1 UCC33 1		DIGCK 1	47%	
Boiler 2	Process 1	Path 2	Fugitive	3%	

Additional Considerations about Overall % Controlled

When calculating emissions, if you have more than one control for the *same* pollutant, e.g. controls 1 and 3 both remove SO2, then your Overall % controlled may be:

- In series: overall % control 1 * overall % control 2 * ...
- In parallel: (overall controlled emissions 1 + overall controlled emissions 2+...)/uncontrolled emissions
- Really complex controls configuration: estimate:
 - e.g. (controlled emissions in series + controlled emissions in parallel)/uncontrolled emissions,
 - e.g. weighted average of the % pollutant control efficiency for all controls

Real Example 2

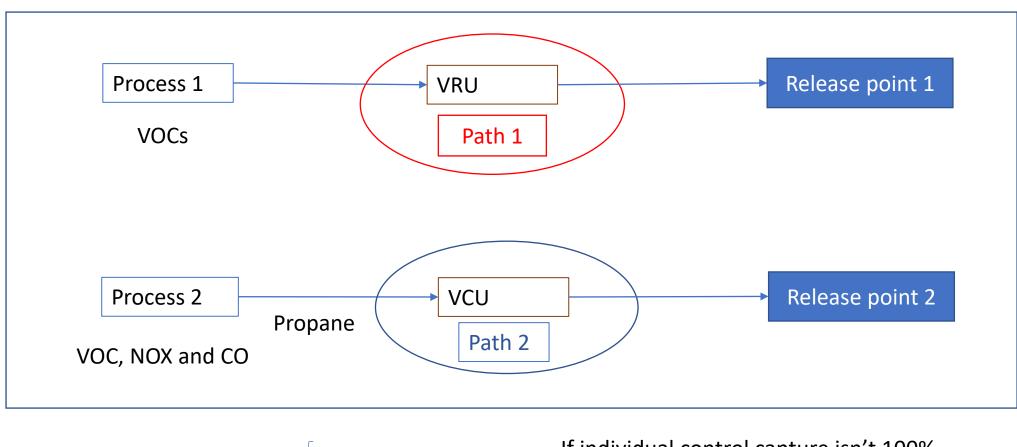


1. The emissions only go to the VCU when the VRU is not working, per permit. The VCU is a backup to the VRU and only was used about 1% of 2019, about 100 hours.

2. Only one runs at a time, taking 100% of the inlet/emissions.

3. Two different release points. A vent off the VRU, the VCU is a stack/flare.

4. Gasoline vapor is only emissions off the loading rack. So VCU emissions are VOCs. Because we use propane in the VRC it's has VOC and NOx/CO.



Process 1 (VOC)Path 1:
VRU sequence 1If individual control capture isn't 100%
then rel apportionment should be
adjusted to reflect fugitives.Process 2 (VOC, NOX and CO)Path 2
VCU Sequence 1Recall VCU is a "backup" for the first
process.

Path Data									
Path ID	Sequence Number	Control or Child Path Assignment	Assigned Control or Child Path Apportionment						
Path 1	1	VRU	100%						
Path 2	1	VCU	100%						

Release Point Data										
Unit ID	Process ID	Path ID	Release Point ID	Release Point Apportionment						
Unit 1	Process 1	Path 1	Release Point 1	100%						
	Process 2	Path 2	Release Point 2	100%						

There are two different processes with different SCCs:

Evaporation recovery unit of gasoline vapors, for VOC and HAP-VOC pollutants.

Propane combustion process including all combustion pollutants, plus whatever VOC wasn't combusted.

How long each control runs (100 hours), etc. would be entered with the process information.

"Take Home" Messages about Path Approach

- An inventory of controls is defined at the facility level
- The relationship between the controls is defined by one or more "control paths"
 - You must define a path for each unique set of controls encountered between the emissions generation point and the release point
 - A path is composed of controls AND / OR paths
 - You define the order of the controls through these associations
 - You may define sets of controls that operate at the same time (parallel controls) by defining the percentage of the stream that flows in one direction or another.
- Associate a release point apportionment record to a given path

Additional Considerations for More than One Control

- How you set up the paths and controls in them for complex control set ups is up to you so long as the basic rules of child/parent/main paths are followed and all required data is entered.
- Path level pollutant efficiency may be an estimate, for paths containing several controls for a single pollutant. E.g. two controls that remove NOx.
 - In series: multiplication of control efficiencies
 - In parallel: controlled emissions from efficiency/total uncontrolled, average, weighted average
 - More complex controls: average, weighted average

How to Get Help

Regardless of what help you need always send:

- 1. Facility name and ID
- 2. Screenshot(s) of error you are getting
- 3. BU template you are using that is giving you errors
- 4. Diagram/even if by hand and scanned in of the controls set up you have (especially for complex controls)

Steps:

- 1. Help Desk first (Click Help in UI top right of your screen)
- 2. Your SLT (they will elevate to EPA as needed)



- GA EPD HAPs Reporting in CAERS for 2020 NEI
 - Tuesday, April 20 2:30 3:30 PM
 - Register: <u>https://geco.gaepd.org/EventRegistration/Default.aspx</u>
- Live Virtual Help Sessions (April June)
 - Email sign-up will be offered
 - Attendance Requirements:
 - Send questions to <u>emissions.inventory@dnr.ga.gov</u> with a screen shot of your problem
 - We will try to address by email first
 - If not resolved by email, we will provide a live help session time slot
 - Help Session Times
 - Every other Tuesday & Thursday from April 27 May 27
 - Every Tuesday & Thursday in June
 - Tuesdays: 10-11 AM; Thursdays: 2-3 PM

Help Sessions for Other SLTs

To be scheduled. Reach out to your SLT if you need help via office hours, if help desk have not been able to help you resolve your issue.

Q & A