

Q&A for EIS CERS Schema Changes Training for 2020 NEI

On July 16, 2020, the Emissions Inventory and Analysis Group hosted a training class on upcoming changes to the Consolidated Emissions Reporting Schema (CERS) for the 2020 NEI. The training was attended by nearly 200 participants.

The training covered field name additions to the schema with a focus on the changes to the point control definitions. The new control information structure is designed to meet the following objectives:

- 1) Provide more accurate and complete information about the control devices and their configurations at a facility
- 2) Improve the maintainability of the control information.
- 3) Improve the reusability of the control information within a facility.

Additional information about the CERS schema changes can be found here: <https://www.epa.gov/sites/production/files/2020-03/documents/proposedchangestocers2.pdf>.

A link to the recorded training class may be found on the NEI Sharepoint site here: https://usepa.sharepoint.com/:f:/r/sites/oar_Work/NEI/Shared%20with%20SLTs/NEI%20Outreach/Training%20Webinars?csf=1&web=1&e=Xaelde

If you have additional questions, reach out to the following contacts:

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Questions we've received on the training are outlined below.

General

1. *Are there plans to change the AERR requirements?*

Answer: There are no specific plans now, but we can say that the AERR will not be changed for the 2020 NEI timeframe.

2. *Do you plan to do outreach to companies in addition to SLTs?*

Answer: We do not currently have plans to do such outreach. However, if specific materials or slides would be helpful to make available to SLTs, please make us aware of those needs so that you can provide them to your facilities to help them understand these changes. Since each agency could be affected differently, and the state programs collect the data from industry, it would not be useful to do a national outreach to the affected industries.

3. *What are the changes to the EIS schema?*

Answer: Most of the components that we have deleted as part of the new schema were the components that EIS did not use. The one notable exception is that we have removed UnitControlApproach and ProcessControlApproach. The way that control information is being modeled is very different from the current model, (see section related to Controls).

Most of the fields that we have added are optional. Moreover, most of the new fields that we have added are only accessible by EPA's inventory developers.

4. *Do SLTs need to include information for those fields that are only editable by EPA, or should they leave them blank when submitting data?*

Answer: SLTs should leave those fields blank. If they are submitted by SLTs, the feedback report would yield warnings that the field is only for EPA inventory developers and the information will not be used.

5. *What are the new mandatory fields?*

Answer: The only new fields that are mandatory are the ProcessStatusCode and ProcessStatusCodeYear elements on the EmissionsProcess component. These two fields replace the former LastInventoryYear field (which was removed). The new fields allow us to make defining the status of the EmissionsProcess similar to defining the status of the units and release points.

6. *It would be helpful to have a column added to the data element table indicating if the element is new or have a column added to the Change Control spreadsheet indicating whether the new element is required.*

Answer: This information is located on pages 8-11 of the CERS Schema document.

7. *Will you send us follow-up to specify what software changes are needed?*

Answer: Given that every emissions inventory software application has its own approach to implementing the inventory structure requirements, we do not have a set of "here is what you need to do" list of changes. We have been working with major vendors of software to ensure they know of these changes. If you or your software vendor have questions on these changes, please contact Jonathan Miller (miller.jonathan@epa.gov) for assistance.

8. *What are the changes to the controls in the new EIS schema?*

Answer: In the new EIS schema, we are collecting the control devices used at a facility and linking them together in a "Control Path." Once defined, this path may be used by any process at the facility. To support this, we have added FacilitySiteControl, FacilitySitePath and all of the components that follow.

9. *What are the business drivers prompting the planned changes to the EIS schema?*

Answer: For controls, the primary driver of the changes was to be able to collect more detailed configurations of control information to better support EPA programs that analyze point source emissions data. The control information is needed by our point source regulatory developers to understand the industry standards for control configurations being used to control hazardous air pollutants (HAPs). It is also needed during the NAAQS review process to accurately reflect existing controls. In EPA’s Regulatory Impact Assessments process, existing controls are assessed to determine whether additional controls are needed to meet new Federal air quality standards. For the non-control changes, the drivers were (a) removing unused fields and (b) making the process status approach consistent with the units and release points. This was needed because the prior approach was being misused by some states and locals, which caused some challenges for using and managing the point source facility inventory and associated emissions inventories.

10. *As some SLTs may not be able to budget software changes, could you allow for the old schema to still be utilized?*

Answer: Unfortunately, we are not able to support both the old and new “Control Approach” method for defining controls. We do understand the magnitude of these changes and will try to support you in any way possible for the 2020 inventory. We understand that not all agencies will be able to provide the controls information in the new format for the 2020 inventory and there will be no “completeness” requirement for agencies to provide the control information for the 2020 NEI.

While the 2020 NEI schedule lists a date to complete the facility inventory, please provide control information at any time before or after that date to reflect the updated approach. Even if you miss the deadline for the facility inventory, EPA will use EIS to create new modeling files from time to time. This step would pull in the latest control information available at the time the modeling file is created. So, even if SLTs are unable to meet the 2020 NEI deadline, getting the data in EIS should still be a priority so that the information can be used by EPA once it’s available.

11. *Will you provide the updated staging tables along with the update of the Bridge Tool in August 2020?*

Answer: We plan to have a working version of the Bridge Tool with the newest staging tables available for agencies to work with by August 31, 2020. It should be noted that this may not be the **FINAL** version of the software, as the CERS Schema is still undergoing a review by the Exchange Network. There may be subtle changes that will be required to properly format the header for generation of the XML from the Bridge Tool. So, the August 31st version can be used to verify the format of the staging tables and XML. However, the August 31st version may be replaced if comments during review require changes to the final

formatting. If that occurs, then SLTs would need to use the newer/final version of the Bridge Tool for their final submissions.

Bridge Tool

12. Will the updated Bridge Tool include the DocumentHeader table when importing staging tables?

Answer: Yes.

Facility

13. Will the LocationAddressIsReadOnly lock apply to facilities with multiple address locations listed? What happens if there is only one address listed when an SLT submits updates to the Facility Inventory?

Answer: There is only one address listed with the facility site record. The LocationIsReadOnly lock applies to that address. The database stores one instance of this address for each facility, and that is the only address that would be locked.

Release Point

14. The release height for volume sources is center of the volume. In the presentation, your slide had the bottom of the volume. What should we use?

Answer: The Release Point Fugitive Height should be measured from the bottom of the volume to the top of the volume for a 3D Fugitive release point.

Process Changes

15. Will the LastEmissionsYear for a process that has previously been provided by a state be carried over in EIS to the new database structure? If so, how will this be done?

Answer: We have determined that previously submitted values of LastEmissionsYear cannot reliably be used for populating the new database structure. State and local agencies have interpreted the field in ways we had not intended, so the information is not reliable. Some organizations have improperly interpreted LastEmissionsYear as the final year they plan to submit data for the process (analogous to the StatusCodeYear if the status were “Permanently Shutdown”). Other organizations have improperly interpreted LastEmissionsYear as the last year *that they have reported to date*, not intending to indicate that the process is closed. The new schema makes the definition clear.

Right now, the only fields that are clearly defined enough to use to populate process status in the new database is from the Emissions Unit record to which a process is connected. We therefore plan to use the exact information from the Emissions Unit Status Code and the Emissions Unit Status Code Year to initially populate the new Process Status Code and Process Status Code Year columns.

16. I could not find ProcessReleasePoint Apportionment in Appendix A –CERS Attribute List. Is it the same as the ReleasePointApportionment Component? How would you relate the ReleasePointApportionmentPathIdentification Component with the ControlPathIdentification Component (do they have the same IDs)? Please explain.

Answer: You are correct, the proper field name is “ReleasePointApportionmentComponent”. The diagram in the “Changes to the CERS Schema for the 2020 NEI” document has been cleaned up and reposted with that element name corrected.

To relate the ReleasePointApportionmentPathIdentification Component with the ControlPathIdentification Component, you use the <ReleasePointApportionmentIdentification> XML tag for the release point ID and <ReleasePointApportionmentPathIdentification> XML tag for the path ID within the <ReleasePointApportionment> XML tag.

Let’s say that for MNPCA, you want to associate release point “RelPt1” with the process and this combination uses the site control path with an identifier of “Path1”. This is the way the XML would look for it:

```
<UnitEmissionsProcess>
  <ProcessIdentification>
    <Identifier>Process1</Identifier>
    <ProgramSystemCode>MNPCA</ProgramSystemCode>
  </ProcessIdentification>
  <ReleasePointApportionment>
    <AveragePercentEmissions>100</AveragePercentEmissions>
    <ReleasePointApportionmentIdentification>
      <Identifier>RelPt1</Identifier>
      <ProgramSystemCode>MNPCA</ProgramSystemCode>
    </ReleasePointApportionmentIdentification>
    <ReleasePointApportionmentPathIdentification>
      <Identifier>Path1</Identifier>
      <ProgramSystemCode>MNPCA</ProgramSystemCode>
    </ReleasePointApportionmentPathIdentification>
  </ReleasePointApportionment>
</UnitEmissionsProcess>
```

17. With no change in the point emissions, SLTs still only need to report the process total emissions to the NEI. The modelers for NATA will apportion the process total emissions to corresponding release points with the ProcessReleasePoint Apportionment and PercentControlReductionEfficiency. Right?

Answer: That is correct. The only change in reporting emissions (as opposed to the facility inventory changes) is that we have added the ability to delete emissions if submitted by mistake. Other than that, there are no changes in the way that emissions data are reported by the states or handled by the modelers.

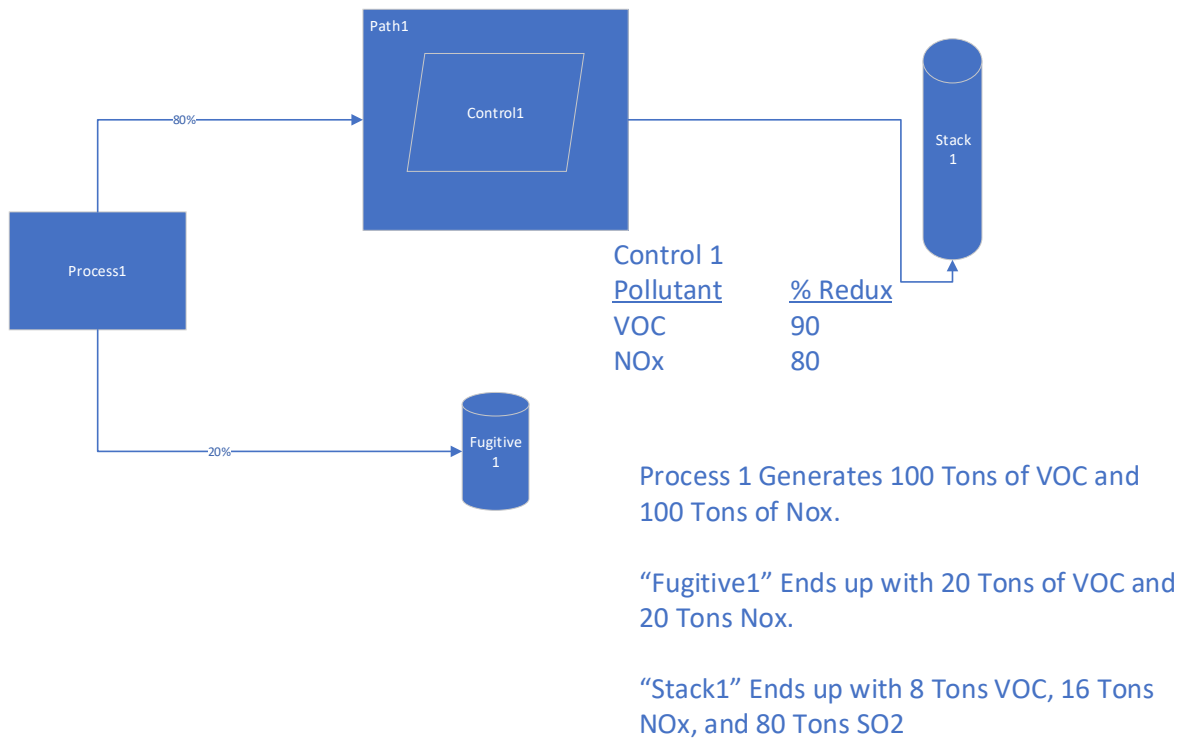
Controls

18. For controls, are current data in EIS going to be migrated to this new structure, or do we need to recreate all this data for 2020?

Answer: We will not be performing a system-wide conversion of the data. This is due primarily to some broad assumptions that we would have to make regarding the types of controls, and how the identifiers would be created. However, if you are interested in having us convert your data, please contact Jonathan Miller (miller.jonathan@epa.gov) and we can talk about what we could offer in terms of data conversion for controls.

19. The example in the presentation didn't specify any situation where the capture efficiencies were less than 100%. Could you provide one?

Answer: Sure. In this example, a process has an 80% capture efficiency. The 20% goes to an uncontrolled fugitive source while the other 80% goes to a control path. This control path will reduce VOC emissions by 90% and reduce NOx emissions by 80% (no control for SO2). So, if Process1 produces 100 tons each of VOC, NOx and SO2, 80% of the emissions flow goes to Stack1. The controls in Path1 reduce the emissions for VOC and NOx (for VOC = $100 * .8 * (1 - .9) = 8$ Tons; For NOx = $100 * .8 * (1-.8) = 16$ Tons):



20. Unlike control measures at the facility level, there are no such identifications for control paths in our state’s master database. The available associations are between control measures and emission units. It is very hard for us to establish control paths at the facility level. The situation may also apply to other states, locals, and tribes. I am wondering if the new CERS could construct the control paths at the emission unit level.

Answer: We recognize that states, locals, and tribes may not immediately be able to fully comply with these changes. However, the changes were needed to support the improved approach and in fact, some states requested these changes to better meet the workings of *their* data systems. Since this approach is ultimately more flexible, accurate, and complete, we believe it is the best approach moving forward, and agencies should seek to upgrade their data systems as time and resources allow.

One of the requirements of this approach was to make the control components reusable across the facility, because this is how controls are used in the real world. The only way that we could accomplish this was by putting an identifier for the component at the facility level. Unfortunately, the data model cannot also support the unit perspective as requested in this question.

21. The new CERS structure has control paths under a facility. It is different from our existing database structure. Could we report different control paths using the identical

information?

Answer: Each path must have its own Path Identification and Path Name.

22. *Do process information changes affect entry of control device/effectiveness/ applicability date?*

Answer: No.

23. *Are there real-world examples of a control device located without a stack?*

Answer: Yes, but not without a *release point*. Every emissions process must be connected to at least one release point (a stack or a fugitive).

24. *Do you have a path example for multiple points routing their emissions to one stack?*

Answer: Let's work through an example of a simple wood workshop. The saw, sander, and planer are connected by a vacuum system routed to a dust filtration system, which has a cyclone centrifuge and an air filter, connected in series.

In this example, our control path would be the dust filtration system. Our Path1 would be control 1, the cyclone centrifuge, and control 2, the air filter, connected in series. Each of the three processes, the saw, the sander, and the planer, would have its emissions routed to control path, Path1.

25. *Will the new design of EIS have a QA check to disallow a 100% control efficiency?*

Answer: We have a data validation to ensure that percent control reduction values for a pollutant do not exceed 99.999 percent.

26. *Currently, my state's software only asks for the overall control efficiency from all of the control devices. Will we need to update our system to collect data pertaining to the path and individual control efficiencies?*

Answer: While we prefer that detailed data be provided at the individual control level, agencies can provide the overall control efficiency across the entire control path. So, you have the option of defining the control reduction efficiency at either the control device level **or** across the entire control path.

27. Some data as reported to EIS now may look like a single control, but really there are multiple identical pieces of control (example: 2 baghouses). We would need unique pathways for all the different controls on different processes even if they look identical now, correct?

Answer: To represent the facility as you have described (with two baghouses), you'd need to add two baghouses as controls in EIS. EPA would prefer to know that there are two baghouses, and so ideally you could enter it that way and then associate the processes accurately to each of the baghouses.

If, for example, the baghouses were in *series with each other*, then you'd create one control path with two baghouses in series and associate the processes accordingly. Also note that a path is "shareable" among different processes using it, so you don't need to create one for each process as you had to do before.

28. What of this detailed level of control information will be required as opposed to not required?

Answer: As per the current Air Emissions Reporting Rule (AERR), control information is required. To meet the AERR requirement with this new schema, you will need to provide the following for an individual control measure:

- agency id to uniquely identify the control,
- control measure code (identifying the type of measure from the list in EIS),
- control operating status.

For the Control Path, you must supply:

- agency identifier,
- a Path Name that is unique within the facility.

All other information about the control is optional, such as pollutant control efficiency and control effectiveness. Although not required, the percent effectiveness should be provided. If it isn't, 100% will be assumed when calculating the effectiveness (unless the effectiveness is defined at the Path level).

Note that capture efficiency is really the release point apportionment, which is required when associating a release point to a process (if capture is less than 100%, then the non-captured emissions should be assigned to a fugitive release point).

29. Can a control device be put into more than one path?

Answer: Yes. But a given control device cannot be used within the same path more than 1 time. Note, however, that the path can be "reused" so once the control is in a path, you may only need to include that path in another path or related it to a process, depending on your configuration.

30. If we need to redesign our forms, how would you recommend our redesign to capture the information for the control device?

Answer: For EIS: there are a few different screens that we have developed with respect to the controls and paths. We have the Site Controls and Site Paths inventory pages (similar to the existing Release Points and Emissions Units in that they list all of the defined Controls and Paths for the facility):

The screenshot displays two tables from a web application. The top table, titled 'Site Controls', has columns for EIS Control ID, Agency Control ID, Program System Code, Control Measure Description, Control Description, % Effectiveness, Last Updated On, Last Updated By, and Last Updated Agency. It lists six control devices with their respective IDs and descriptions. The bottom table, titled 'Site Control Paths', has columns for EIS Path ID, Agency Path ID, Program System Code, Path Name, Path Description, and Percent Effectiveness. It lists six paths with their respective IDs and names. Both tables include search filters and a 'Download Results: CSV' option.

EIS Control ID	Agency Control ID	Program System Code	Control Measure Description	Control Description	% Effectiveness	Last Updated On	Last Updated By	Last Updated Agency
608815	ControlDevice1	COOPHE	Activated Carbon Injection (ACI)		100	2020-07-10 10:12 AM	Jonathan	EIS
608715	ControlDevice2	COOPHE	Spray Screen		100	2020-07-16 07:42 AM	Jonathan	EIS
608815	ControlDevice3	COOPHE	Spray Dryer Adsorber (SDA)		100	2020-07-16 07:43 AM	Jonathan	EIS
608915	ControlDevice4	COOPHE	Spray Scrubber		100	2020-07-16 07:44 AM	Jonathan	EIS
609015	ControlDevice5	COOPHE	Spray Dryer Adsorber (SDA)		100	2020-07-16 07:46 AM	Jonathan	EIS
609115	ControlDevice6	COOPHE	Scrubber		100	2020-07-16 07:46 AM	Jonathan	EIS

EIS Path ID	Agency Path ID	Program System Code	Path Name	Path Description	Percent Effectiveness
5116	Ex2Path1	COOPHE	TestPath1	Test path 1	100
5216	Ex1Path1	COOPHE	Sampe1Path1		100
5316	Ex3Path1	COOPHE	Example3Path1		100
5416	Ex2Path2	COOPHE	Ex2Path2		100
5516	Ex3Path2	COOPHE	Ex3Path2		100
5616	Ex3Path3	COOPHE	Ex3Path3		100

You are able to click on any one of the EIS Control IDs (top table) to view the detailed information about that Control or on the EIS Path IDs (bottom table) to view the detailed information about the Path.

For collecting facility information: To create the Path Definition, we created an interface (shown below) that lists all the Controls available at the site and all the paths (minus the one you are defining) available at the facility. From that interface, you drag & drop the items from the left side of the screen to the right side of the screen in the order that the controls or paths are encountered.

Also, on the right side of the interface, users may renumber the “Sequence Number” to change the order of the controls. Items with the same sequence number indicate that the emissions stream has split (i.e., that the controls are in parallel). The % Control Apportionment for all

entries with the same sequence number must total to 100% (much like the release point apportionment). So here is how that looks in EIS:

Add/Edit Site Control Path Definition

Facility Site

Site Control Path

Control Path Definition

Instructions for the form and control path definition business rules will go here

SITE CONTROLS

Add Site Control

608815 - ControlDevice3 (CODPHE) - Spray Dryer Adsorber (SDA)
609115 - ControlDevice6 (CODPHE) - Scrubber
609015 - ControlDevice5 (CODPHE) - Spray Dryer Adsorber (SDA)
608615 - ControlDevice1 (CODPHE) - Activated Carbon Injection (ACI)

Available Controls at the Facility

SITE CONTROL PATHS

Add Site Control Path

5616 - Ex3Path3 (CODPHE) - Ex3Path3
5216 - Ex1Path1 (CODPHE) - Same1Path1
5416 - Ex2Path2 (CODPHE) - Ex2Path2
5516 - Ex3Path2 (CODPHE) - Ex3Path2
5116 - Ex2Path1 (CODPHE) - Test1Path1

Available Paths

PATH DEFINITION

Sequence Number	Path or Control Definition	Control Apportionment (%)
1	608715 - ControlDevice2 (CODPHE) - Spray Screen	100
2	608915 - ControlDevice4 (CODPHE) - Spray Scrubber	100

Order the Control Devices are Encountered

Undo | Last Save | Save | Submit | Cancel