

# *Monitoring Plan Pitfalls*

By Bill Montag



# A Note From the EPA on 8-26-19

**EPA recently conducted an audit of analyzer component IDs and their reported serial numbers and discovered two issues they wanted to bring to everyone's attention.**



# A Note From the EPA (cont)

1. Component IDs are not being updated when analyzers are replaced.
  1. They found many times where an analyzer was supposed to be in service for over 15 years. They consider that suspect and much longer than the typical lifespan of an analyzer.
  2. In the event of an analyzer replacement, create a new Component ID and start date/hour that coincides with the date/hour the new analyzer was placed into service.
  3. Also report a QA Certification Event Data record to indicate the analyzer change
2. Manufacturer, Model Version, and Serial Numbers are not being entered correctly.
  1. A review of the data discovered entries such as “###”, “???” and “Later”. All of these should be updated with correct analyzer serial number.
  2. For flow monitors, provide a single component serial number that represents the control unit of the monitor.
  3. Currently ECMPS allows the updating of these fields without changing or updating the Component ID. However EPA is investigating changes to prevent editing of these fields once hourly emissions data has been submitted using the analyzer.



# A new component needs a new ID

- When you change out a component in the DAHS (new analyzer, dahs, etc...) you need to create a new component ID. Simply updating the record is not the way to go.
- You then need to remember items like the analyzer range record and the component tab in the system record.
- For sites that rotate fuel flowmeters, you can list all the components in the monplan. But must age the records correctly for which component is in a which time.

*“You can have two houses, but you can only be at home in one of them at a time.”*



# Formula text fields

- Whenever a system or component changes, the formula should be updated to reflect that change.
- Typically we suggest making that change and updating to the current text.
- You also have the option to retire that formula id and simply add a new one to reflect the aging of that formula in conjunction with the component.
- F#(xxx) = formula ID number
- S#(xxx-yyy) component id-system id





# X Pattern Flow Systems

- X-flow pattern systems should consist of:
  - one primary system with both A and B components and DAHS.
  - two redundant backup systems
    - one A-side system with the A component and a DAHS
    - one B-side system with the B component and a DAHS.
- If you have an X-flow pattern system include the “X-FL” formula. This indicates you intend on using this system in this manner versus as just straight redundant backups.



# “To PLC or not to PLC”

- Adding a PLC/SEAL/Data Logger as a component
- It is not currently a requirement, but it has been on EPA’s radar for some time to make it such
- The choice is yours to do so



# Dahs Data in the monitoring plan

- Recommended make for our DAHS systems is “NETDAHS”
- Recommended model is the Software Rev #. Example 9.4.5
- Recommended serial number is the service tag on most of the Dahs servers





# Monitoring Plan (ECMPS)

ECMPS Client Tool

File View EPA Host Help

**Add/Edit Monitoring Plan Data**

Facility ID (ORISPL):      State:      Location: CS102F      [Evaluate Monitoring Plan](#)  
Facility Name:      [Add Stack/Pipe](#)      **Already Submitted**

Methods   **Components**   Systems   Qualifications   Formulas   Defaults   Non-Flow Spans   Flow Spans   Rect. Duct WAFs   Loads   Location Attributes   Stack and Pipes   Supplemental MATS

Component ID	Component Type Code	Sample Acquisition Code	Basis Code	Manufacturer	Model/Version	Serial Number	Remove?
101	SO2	DOU	W	TECO	43I	713821901	<a href="#">Remove?</a>
102	NOX	DOU	W	TECO	42I	713821899	<a href="#">Remove?</a>
103	CO2	DOU	W	TECO	410I	717322587	<a href="#">Remove?</a>
104	FLOW	U	W	MONITOR LABS	150	1500691A	<a href="#">Remove?</a>
108	FLOW	U	W	MONITOR LABS	150	1500691B	<a href="#">Remove?</a>
109	HAHS			BARCOCK & WILCOX PGG	9.2.0		<a href="#">Remove?</a>

[Add](#)

**Component**   Analyzer Range

Component ID: 101  
Component Type Code: SO2      SO2 Concentration  
Sample Acquisition Code: DOU      Dilution Out-of-Stack  
Basis Code: W      Wet  
Manufacturer: TECO  
Model/Version: 43I  
Serial Number: 713821901  
Hg Converter Indicator:

*Last updated by EWentlin: 8/13/2015 9:24 AM*

[Expand >>](#)   [Save Changes](#)   [Cancel Changes](#)



# Monitoring Plan (DAHS)

**Monitoring Plan**

Facility ID (ORISPL):  Location:

Facilities Methods **Components** Systems Qualifications Formulas Defaults Non-Flow Spans Flow Spans Rect Duct WAFs Loads Location Attributes Stack and Pipes Supplemental MATS EdgeCONNECT

Component ID	Component Type Code	Sample Acquisition Code	Basis Code	Manufacturer	Model/Version	Serial Number
101	SO2	DOU	W	TECO	43I	713821901
102	NOX	DOU	W	TECO	42I	713821899
103	CO2	DOU	W	TECO	410I	717322587
104	FLOW	U	W	MONITOR LABS	150	1500691A
108	FLOW	U	W	MONITOR LABS	150	1500691B
109	DAHS			Babcock & Wilcox	9.4.2	

**Component** Analyzer Ranges

Component ID:

Component Type Code:  SO2 Concentration

Sample Acquisition Code:  Dilution Out-of-Stack

Basis Code:  Wet

Manufacturer:

Model/Version:

Serial Number:

Hg Converter Indicator:



# EdgeCONNECT

**Monitoring Plan**

Facility ID (ORISPL):  Location:

Defaults Non-Flow Spans Flow Spans Rect Duct WAFs Loads Location Attributes Unit Characteristics Supplemental MATS **EdgeCONNECT**

Parameter	Fuel Code	System Designation	Function	Channel Label	Units of Measure
Unit Load	NFS	Primary	Single/Low Data Channel	1_MW	MW
Fuel Factor	NFS	Primary	Fc-Factor for CEMS (NOX)	1_Fc_Fact	SCFMMBTU
CO2 CEMS	NFS	Primary	Single/Low Data Channel	1_CO2	PCT
CO2 CEMS	NFS	Primary	Calibration Channel	1_CO2	PCT
NOx CEMS	NFS	Primary	Single/Low Data Channel	1_NOx	PPM
NOx CEMS	NFS	Primary	Calibration Channel	1_NOx	PPM
NOx CEMS	NFS	Primary	Controls Channel	1_NOx_Ctrl	0=Ok, 1=Off
Appendix D/G (SO2/CO2)	PNG	Primary	Fuel Flow Channel	1_Gas_H_Fl	HSCF
Appendix D/G (SO2/CO2)	PNG	Primary	GCV Channel	1_Gas_HBtu	BTUHSCF

**Part 75 DAHS channels must be linked to EdgeCONNECT for each given parameter**



# Certification Dates

Facilities	Methods	Components	Systems	Qualifications	Formulas	Defaults	Non-Flow Spans	Flow Spans	Rect Duct WAFs	Loads	Location
Monitor...	System Type Code	System Designation Code	Fuel Code	Begin D...	Begin H...	End Date	End Hour	Cert Date	Cert Hour	PCert D...	PCert H...
011	NOX	P	NFS	01/01/1...	0			01/01/1...	0	01/01/1...	0
014	GAS	P	PNG	01/01/1...	0			01/01/1...	0	01/01/1...	0

System	System Component	
Monitoring System ID:	011	
System Type Code:	NOX	NOx Emission Rate
System Designation Code:	p	Primary
Fuel Code:	NFS	Non-Fuel Specific
Begin Date:	01/01/1995	
Begin Hour:	0	
End Date:		
End Hour:		
Certification Date:	01/01/1995	
Certification Hour:	0	
Provisional Certification Date:	01/01/1995	
Provisional Certification Hour:	0	

**Add** **Update** **Delete** **Cancel**

**Certification dates and Provisional Certification dates are tracked in the 'Systems' tab. This information is not listed in ECMPS, but it is used in NetDAHS to determine the time period in which a system becomes valid.**





# Load Range Analysis

**Monitoring Plan**

Facilities Methods Components Systems Qualifications Formulas Defaults Non-Flow Spans Flow Spans Rect Duct WAFs **Loads** Location

Max Load Value	Units of Measure Code	Lower Operation Boundary	Upper Operation Boundary	Normal Op Level Code	Second Op Level Code	Second Normal Indic
700	MW	270	677	H	M	0
700	MW	270	677	H	L	0
700	MW	270	677	H	M	0
700	MW	270	677	H	L	1
700	MW	270	677	H	L	1

**Load**

Max Load Value: 700

Units of Measure Code: MW Megawatt

Lower Operation Boundary: 270

Upper Operation Boundary: 677

Normal Op Level Code: H High

Second Op Level Code: M Mid

Second Normal Indicator: 0 - No

Load Analysis Date: 03/28/2016

Begin Date: 03/28/2016

Begin Hour: 0

End Date:

End Hour:

Load Start Date

Load End Date

High Range

514.2

Mid Range

392.1

Low Range



**Run Load Analysis**

**Determining the Range of Operation is now done in the 'Loads' tab.**

**It can also be done in the Single-Load Claim in the QA section.**



# Load Range Analysis

Load Start Date	Load End Date
 08/01/2018	 08/14/2019
High Range	90.08%
-----	514.2
Mid Range	4.68%
-----	392.1
Low Range	5.24%
<b>Run Load Analysis</b>	

Choose a Start & End date and then choose 'Run Load Analysis' to calculate the percentage of each run time in Low, Mid, and High range.





# Load Range Analysis Notes

- Per Part 75 app A 6.5.2.1 (a) (1) to be a minimum of 4 operating quarters unless operations has changed then you need min. 2 operating quarters
- Can take a screen shot of the load analysis and save it in a folder
- For Gas Turbines you can use second normal load to allow doing RATA at different load ranges
- The Single-load flow RATA exemption if load is in a load range >85%. From time of last RATA till 21 days before next RATA



# Qualification Records

Facilities	Methods	Components	Systems	Qualifications	Formulas	Defaults	Non-Flow Spans	Flow Spans	Rect Duct WAFs
Qualification Type Code		Begin Date		End Date					
GF		01/01/2000							
PK		01/01/2000		12/31/2001					
PK		01/01/2001		12/31/2001					
PK		01/01/2006							

You can now generate the qualification records on the DAHS and export the entire monplan xml file into ECMPS during Q1 reporting



# Qualification Records

Qualification Year:

Average Percent Value:

Year 1 Data Year:

Year 1 Data Type Code:  Actual

Year 1 Percentage Value:

Year 2 Data Year:

Year 2 Data Type Code:  Actual

Year 2 Percentage Value:

Year 3 Data Year:

Year 3 Data Type Code:  Actual

Year 3 Percentage Value:

Update the  
Qualification  
year and hit  
the shift data  
button

**Confirm Data Shift**

Are you sure you want to shift the data from Year 2 to 1 and from Year 3 to 2?



# Qualification Records

Qualification Year:	2019			
Average Percent Value:	13.2			
Year 1 Data Year:	2016	Heat Input	Capacity	
Year 1 Data Type Code:	A		Actual	
Year 1 Percentage Value:	9.1			
Year 2 Data Year:	2017	Heat Input	Capacity	
Year 2 Data Type Code:	A		Actual	
Year 2 Percentage Value:	6.8			
Year 3 Data Year:	2018	Heat Input	Capacity	
Year 3 Data Type Code:	A		Actual	
Year 3 Percentage Value:	3.6			
	Shift Data	Add	Update	Delete
Cancel				

Once done click on the capacity or heat input buttons. They will automatically calculate the annual values for you. Then hit add and the record will be ready to go.



# *Questions?*

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