Environmental Department Transitions: Celebrating the Past, Welcoming the Future

Retirements

- After 10 years with CiSCO, **Kelly Sullivan** retired.
- After 25 years with CiSCO, **Reggie Williams** is retiring at the end of the year

New Team Members

- **Niah Wilson** joined the team earlier this year.
- **Christina Sanchez** is the newest addition to our team – welcome aboard!

Still With Us

- **Andrew Moscovich** continues to be a key part of our environmental team.

Possible Topic Titles:

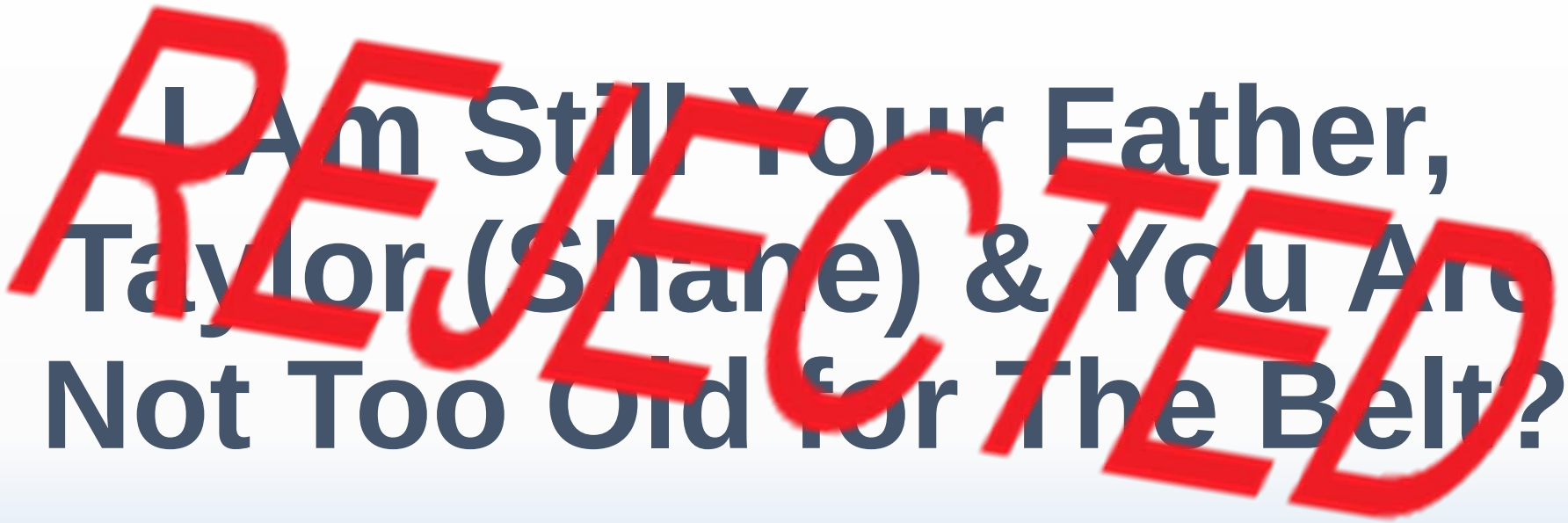
Why Are you Making Me Present, I’m Dealing with Short-Timer Stuff?

Why Are you Making Me Present, I'm Dealing with Short-Timer Stuff?

REJECTED

I Am Still Your Father, Taylor (Shane) & You Are Not Too Old for The Belt?

I Am Still Your Father, Taylor (Shane) & You Are Not Too Old for The Belt?



2029 CEMS User's

2030 CEMS User's
Group Meeting Agenda

Custom Instrumentation
Services Corporation

Retirement:

Tuesday September 10th, 2030

REJECTED

8:00 – 8:15 Greeting & Introduction

8:15 – 8:30 Presentation by Reggie Williams

8:30 – 9:15 Presentation by Reggie Williams

9:15 – 9:45 Presentation by Reggie Williams

9:45 – 10:00 Break

Where Are the Penny Nails & Other Important Home Depot Questions For New Hires?

Where Are the Penny Nails & Other Important Home Depot Questions For New Hires?

REJECTED

CISCO

Hot Regulatory Topics of 2025

Reginald Williams

Senior Environmental Scientist

09/11/2025

Summary of Topics

- Separation of Span & Range
- Subpart KKKKa
- Part 98 GHG Warming Potential Updates
- Part 98 CO2e Calculations Revisited
- Dual Range Flow Meter Transmitters
- Regulations vs Regulations.
- What’s Normal Got To Do With It

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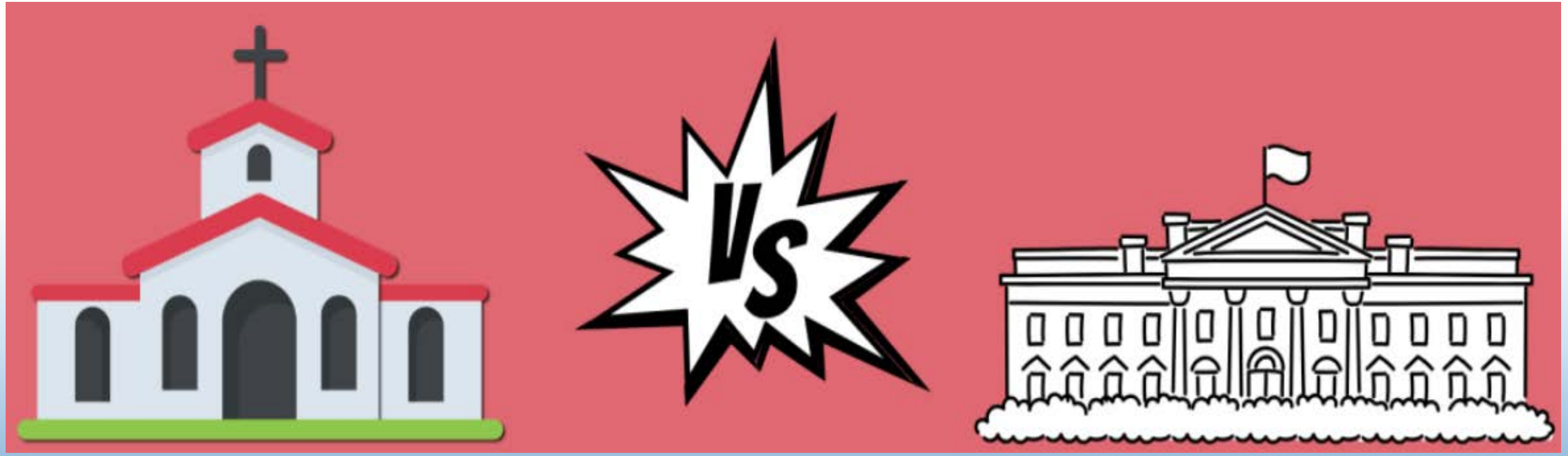
Separation of Span & Range



Separation of Span & Range(cont.)

SPAN DESCRIPTION	40 CFR 60 (ORIGINAL)	40 CFR 60 (POST 2016)	40 CFR 75
Regulatory Reference	40 CFR 60, App. B, PS2 §3.11 & 40 CFR 60, Appendix A, Method 7E §3.4	40 CFR 60, App. B, PS2 §3.11 & 40 CFR 60, Appendix A, Method 7E §3.4	40 CFR 75, App. A, §2.1 & 40 CFR 75, Appendix A, 2.1.2.3
Span/Range	Same	Different	Different
Data Range Requirement	20 – 100% of Span	20 – 100% of Span	20 – 80% of Range
Determining Low Span	Not Addressed	2 x ES, Round Next 10 ppm	MEC, Round Next 10 ppm
Exception for Low Span	Not Addressed	The equivalent emission concentration is not less than 30 percent of the span value.	Readings less than 20.0 percent of FS on the low measurement range
Determining High Span	Not Addressed	2 x ES, Round Next 10 or 100 ppm (under 500 ppm)	MPC, Round Next 10 ppm or 100 ppm
Determining Range	FSR of Analyzer	FSR of Analyzer	FSR of Analyzer

Subpart KKKKa

- CAA section 111(b)(1)(B) requires the EPA to “at least every 8 years review and, if appropriate, revise” new source performance standards.

- On 11/22/2024, the EPA proposed to strengthen limits on emissions of NOx from most new, modified, and reconstructed fossil fuel-fired stationary combustion turbines. The proposed New Source Performance Standards (NSPS) are based on the application of combustion controls and selective catalytic reduction (SCR).

- EPA is proposing to maintain the current limits for SO2.

- The final rule must be signed by November 12, 2025. The FR publication date is typically is a few weeks after signature.

- CiSCO submitted comments that are part of EPA’s final rule review process and will be addressed in the final action.

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Table 1 to Subpart KKKKa of Part 60 - Nitrogen Oxide Emission Standards for Stationary Combustion Turbines

Note: all numerical values have two significant figures

Combustion Turbine Type	Combustion Turbine Fuel	Input-Based NOx Emission Standard	Optional Output-Based NO_X Standard
Combustion Turbines Operating Above 70 Percent of the Base Load Rating			
New or reconstructed, low to intermediate load with base load rating ≤ 250 MMBtu/h	Natural gas	40 ng/J (0.092 lb/MMBtu)	0.35 kg/MWh-gross (0.76 lb/MWh-gross) 0.35 kg/MWh-net (0.78 lb/MWh-net)
	Non-natural gas	120 ng/J (0.29 lb/MMBtu)	1.4 kg/MWh-gross (3.0 lb/MWh-gross) 1.4 kg/MWh-net (3.1 lb/MWh-net)
New or reconstructed, base load with base load rating ≤ 250 MMBtu/h	Natural gas	4.8 ng/J (0.011 lb/MMBtu)	0.035 kg/MWh-gross (0.076 lb/MWh-gross) 0.035 kg/MWh-net (0.078 lb/MWh-net)
	Non-natural gas	15 ng/J (0.035 lb/MMBtu)	0.16 kg/MWh-gross (0.36 lb/MWh-gross) 0.17 kg/MWh-net (0.37 lb/MWh-net)
Modified, all loads with base load rating ≤ 250 MMBtu/h	Natural gas	40 ng/J (0.092 lb/MMBtu)	0.35 kg/MWh-gross (0.76 lb/MWh-gross) 0.35 kg/MWh-net (0.78 lb/MWh-net)
	Non-natural gas	120 ng/J (0.29 lb/MMBtu)	1.4 kg/MWh-gross (3.0 lb/MWh-gross) 1.4 kg/MWh-net (3.1 lb/MWh-net)
New or reconstructed low load with base load rating > 250 MMBtu/h and ≤ 850 MMBtu/h	Natural gas	40 ng/J (0.092 lb/MMBtu)	0.35 kg/MWh-gross (0.76 lb/MWh-gross) 0.35 kg/MWh-net (0.78 lb/MWh-net)
	Non-natural gas	120 ng/J (0.29 lb/MMBtu)	1.4 kg/MWh-gross (3.0 lb/MWh-gross) 1.4 kg/MWh-net (3.1 lb/MWh-net)
New or reconstructed, intermediate load or base load with base load rating > 250 MMBtu/h and ≤ 850 MMBtu/h	Natural gas	4.8 ng/J (0.011 lb/MMBtu)	0.035 kg/MWh-gross (0.076 lb/MWh-gross) 0.035 kg/MWh-net (0.078 lb/MWh-net)
	Non-natural gas	15 ng/J (0.035 lb/MMBtu)	0.16 kg/MWh-gross (0.36 lb/MWh-gross) 0.17 kg/MWh-net (0.37 lb/MWh-net)
Modified, all loads with base load rating > 250 MMBtu/h and ≤ 850 MMBtu/h	Natural gas	40 ng/J (0.092 lb/MMBtu)	0.35 kg/MWh-gross (0.76 lb/MWh-gross) 0.35 kg/MWh-net (0.78 lb/MWh-net)
	Non-natural gas	120 ng/J (0.29 lb/MMBtu)	1.4 kg/MWh-gross (3.0 lb/MWh-gross) 1.4 kg/MWh-net (3.1 lb/MWh-net)
New, modified, or reconstructed, low load with base load rating > 850 MMBtu/h	Non-natural gas	24 ng/J (0.055 lb/MMBtu)	0.24 kg/MWh-gross (0.53 lb/MWh-gross) 0.25 kg/MWh-net (0.55 lb/MWh-net)
	Non-natural gas	64 ng/J (0.15 lb/MMBtu)	0.70 kg/MWh-gross (1.6 lb/MWh-gross) 0.72 kg/MWh-net (1.6 lb/MWh-net
New, modified, or reconstructed, intermediate or base load with base load rating > 850 MMBtu/h	Natural gas	4.8 ng/J (0.011 lb/MMBtu)	0.035 kg/MWh-gross (0.076 lb/MWh-gross) 0.035 kg/MWh-net (0.078 lb/MWh-net)
	Non-natural gas	8.2 ng/J (0.019 lb/MMBtu)	0.089 kg/MWh-gross (0.20 lb/MWh-gross) 0.091 kg/MWh-net (0.20 lb/MWh-net)
New, modified, or reconstructed offshore combustion turbines, all sizes and loads	Natural gas	40 ng/J (0.092 lb/MMBtu)	0.35 kg/MWh-gross (0.76 lb/MWh-gross) 0.35 kg/MWh-net (0.78 lb/MWh-net)
	Non-natural gas	120 ng/J (0.29 lb/MMBtu)	1.4 kg/MWh-gross (3.0 lb/MWh-gross) 1.4 kg/MWh-net (3.1 lb/MWh-net)
Combustion Turbines Operating at 70 Percent of Less of the Base Load Rating and Other Specified Conditions			
Combustion turbines with base load rating ≤ 250 MMBtu/h operating at 70 percent or less of the base load rating, sites north of the Arctic Circle, and/or ambient temperatures of less than 0 °F	Natural gas or non-natural gas	250 ng/J (0.58 lb/MMBtu)	2.7 kg/MWh-gross (6.0 lb/MWh-gross) 2.8 kg/MWh-net (6.1 lb/MWh-net)
Combustion turbines with base load rating > 250 MMBtu/h operating at 70 percent or less of the base load rating, sites north of the Arctic Circle, and/or ambient temperatures of less than 0 °F	Natural gas or non-natural gas	160 ng/J (0.37 lb/MMBtu)	1.7 kg/MWh-gross (3.8 lb/MWh-gross) 1.8 kg/MWh-net (3.9 lb/MWh-net)
Heat recovery units operating independent of the combustion turbine(s)	Natural gas or non-natural gas	90 ng/J (0.21 lb/MMBtu)	1.0 kg/MWh-gross (2.2 lb/MWh-gross) 1.0 kg/MWh-net (2.2 lb/MWh-net)

Subpart KKKKa (cont.)

- Three size-based turbine subcategories based on base load heat input rating:
  - Small: ≤ 250 MMBtu/h
  - Medium: > 250 to ≤ 850 MMBtu/h
  - Large: > 850 MMBtu/h

  (Excludes supplemental fuel input; consistent with KKKK)

- Further subcategorized by operating load based on 12-month capacity factor:
  - Low Load: ≤ 20%
  - Intermediate Load: > 20% to ≤ 40%
  - Base Load: > 40%

- Also subcategorized by fuel type: Natural gas-fired vs. non-natural gas-fired

- Other proposed subcategories retained from Subpart KKKK: Part-load operation, Arctic Circle locations, Ambient temps < 0°F HRSG units operating independently

Part 98 GHG Warming Potentials

40 CFR 98: CO_2 Equivalent (CO_2e) for CO_2, CH_4 and N_2O in Metric Tons

Use the following equation to calculate annual CO_2, CH_4 or N_2O CO_2e emissions for Greenhouse Gas Reporting, per 40CFR98 Subpart A.

$$CO_2e = \sum_{i=1}^{n} GHG_i \times GWP_i$$

Units: metric tons/year

Reference: 40CFR98.2(b)(4), Equation A-1
CiSCO Formula ID A-1

- CO_2e = Carbon dioxide equivalent, metric tons/year.
- GHG_i = Mass emissions of each greenhouse gas (CO_2, CH_4 or N_2O), metric tons/year.
- GWP_i = Global warming potential for each greenhouse gas from Table A-1 of this subpart.
- n = Global warming potential for each greenhouse gas from Table A-1 of this subpart.

Notes:

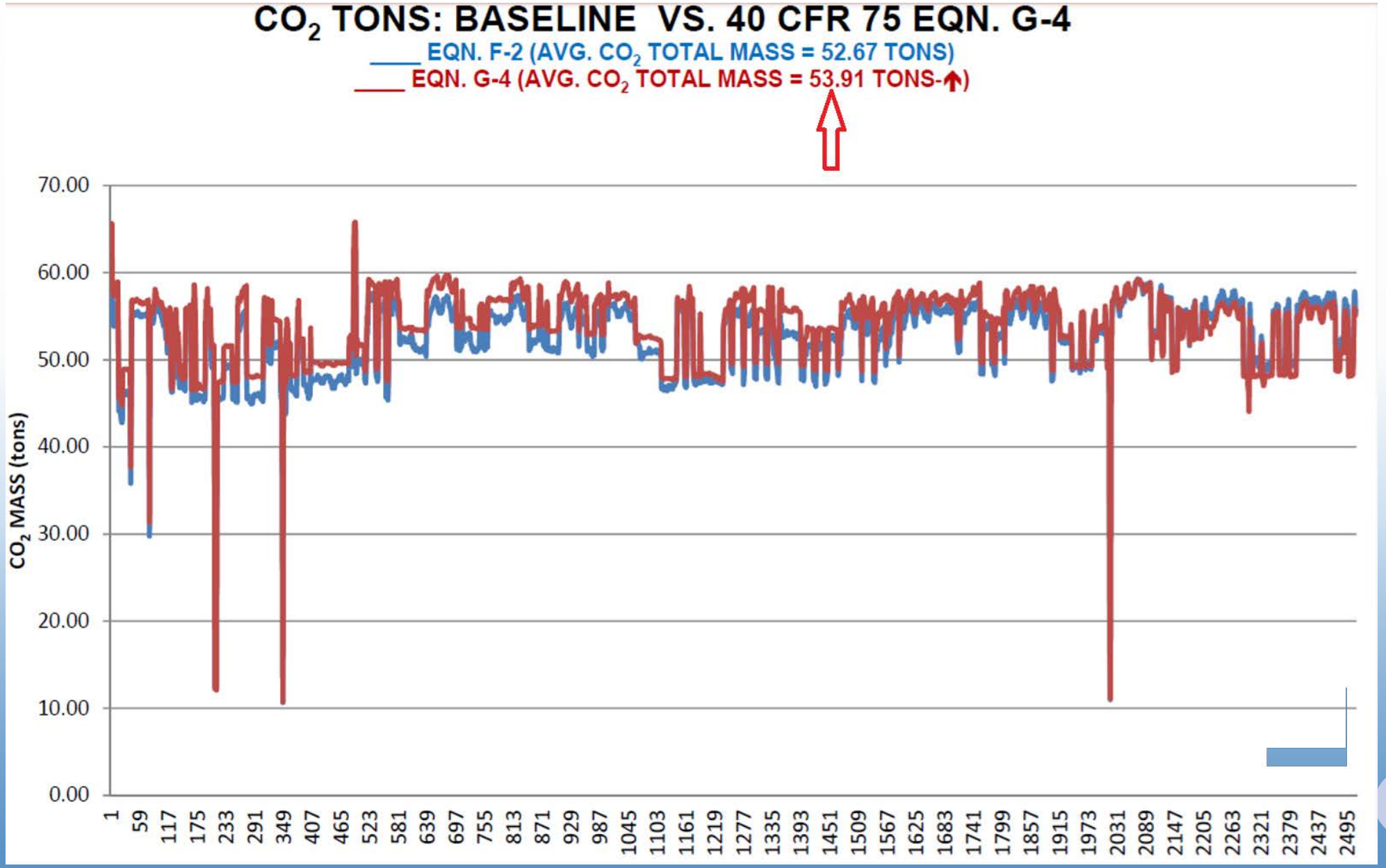
For natural gas the default GWP (40CFR98 Subpart A, Table A-1):

GWP CO_2 = 1

GWP CH_4 = 28 (from 1/1/2025 to current)
= 28 (from 1/1/2024 to 1/1/2025)
= 25 (from 1/1/2014 to 12/31/2023)
= 21 (from 12/29/2009 to 12/31/2013)

GWP N_2O = 265 (from 1/1/2025 to current)
= 265 (from 1/1/2024 to 1/1/2025)
= 298 (from 1/1/2014 to 12/31/2023)
= 310 (from 12/29/2009 to 12/31/2013)

Part 98 CO2e Calculations (revisited)



Part 98 CO2e Calculations (revisited)-cont.

CO_2 Mass Emission, Part 72 Method

In lieu of using the procedures, methods, and equations in 40CFR75 Appendix G 2.1, the owner or operator of an affected gas-fired unit as defined under 40CFR §72.2 may use the following equation and records of hourly heat input to estimate daily CO_2 mass emissions (in tons).

$$W_{CO_2} = \left(\frac{F_c \times H \times U_f \times MW_{CO_2}}{2000} \right)$$

Units: tons/hr

Reference: 40CFR75 Appendix G 2.3

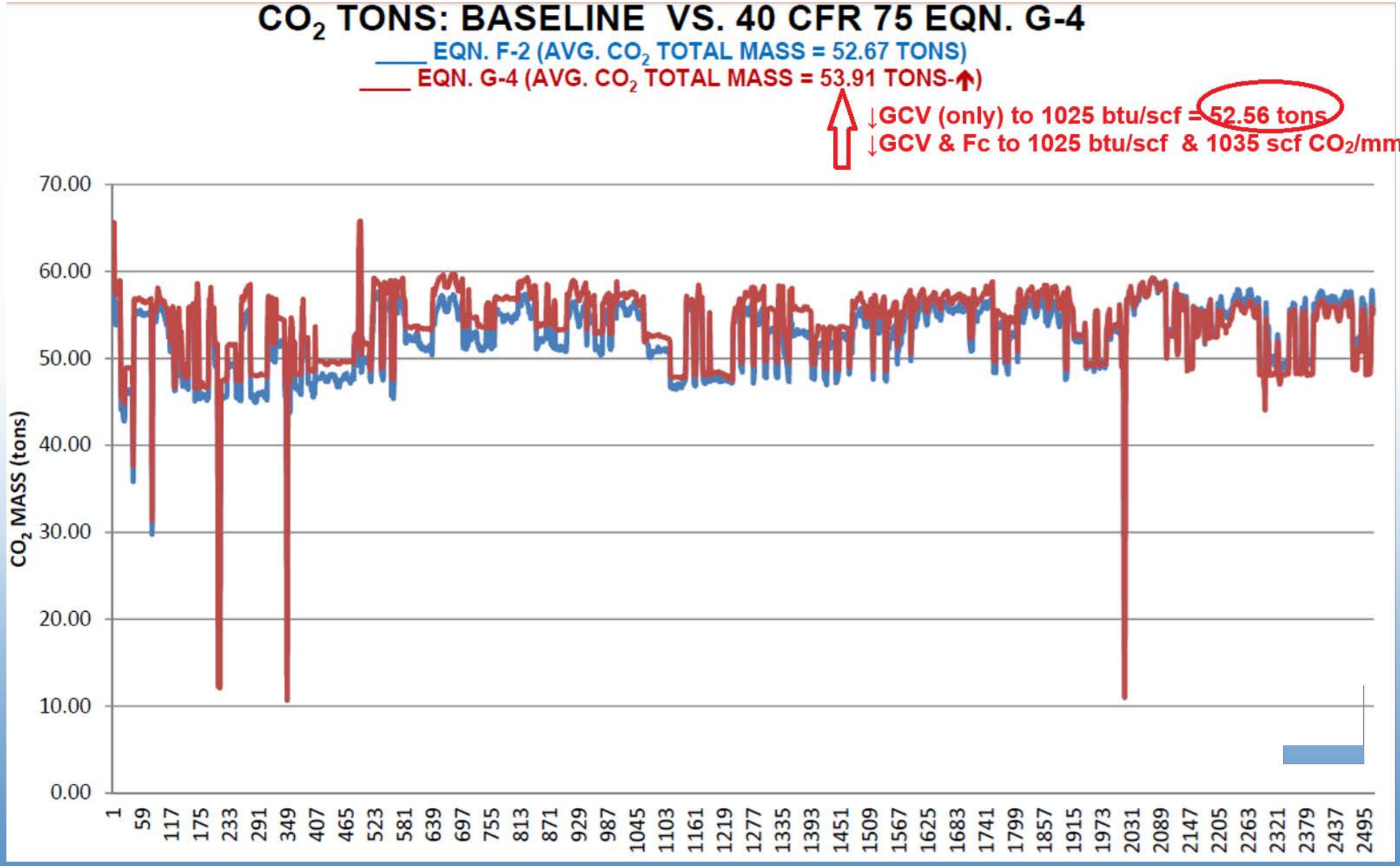
CiSCO Formula ID G-4

- W_{CO2} = CO_2 = emitted from combustion, tons/hour.
- F_c = Carbon based F-factor, 1040 scf/mmBtu for natural gas; 1420 scf/mmBtu for crude, residual, or distillate oil and calculated according to the procedures in 40CFR75 Appendix F 3.3.5
- H = Hourly heat input in mmBtu as reported in company records, see F-20.
  - *H = GCV x FF*
- U_f = 1/385 scf CO_2/lb-mol at 14.7 psia and 68°F.
- MW_{CO2} = Molecular weight of carbon dioxide (44.0).

Note:

To get Metric Tons divide W_{CO2} by the conversion factor 1.10231.

Part 98 CO2e Calculations (revisited)-cont.



Dual Range Fuel Flow Meter Transmitters

- Part 75 and ECMPS do not address or support dual range fuel flow meters.
- The EPA will not reprogram ECMPS or revise Part 75 to accommodate them.
- Workaround (as discussed with the EPA):
  - Represent each range (low and high) as a separate component ID in the Monitoring Plan.
  - Each component ID must be part of the same gas or oil system.
  - A failure in either range or component will result in the system being out of control.
  - EPA strongly recommends performing all QA tests for both ranges at the same time.
  - Submit calibrations for low and high range transmitters under their respective component IDs.
  - Primary element inspections (PEI) must be submitted twice—once for each component ID.

Regulation vs Regulation

- Title 5 (Clean Air) v. Title 16 (Nature)-Who Wins?
  - 40 CFR 60 EPA Headquarters Measurement Technology Group (MTG)
  - US EPA, Region 9 (AIR-1)
  - US EPA, Region 9, Manager, Air Enforcement Office (ENF 2-1), Enforcement and Compliance Assurance Division

EPA Moves to Repeal of GHG Standards for Fossil Fuel Power Plants

- The EPA is proposing to make a finding that GHG emissions from fossil fuel-fired power plants do not contribute significantly to dangerous air pollution within the meaning of the statute.
- On this basis of proposing to find that GHG emissions from fossil fuel-fired power plants do not contribute significantly to dangerous air pollution, the EPA is proposing to repeal all GHG emissions standards for the power sector under CAA section 111, specifically the 2015 NSPS, codified in 40 CFR part 60, subpart TTTT, subparts TTTTa and UUUUb.
- The comment period closed 8/7/2025 so a potential timeline may aim to finalize the rule by late 2025
- Post-finalization, lawsuits may delay or block the final rule.
- Reminder on Subpart TTTT/TTTTa: *Owners or operators of stationary combustion turbines that are only permitted to burn fuels with a consistent chemical composition (i.e., uniform fuels) that result in a consistent emission rate of 69 kilograms per gigajoule (kg/GJ) (160 lb CO2/MMBtu) or less are not subject to any monitoring or reporting requirements under this subpart.*

WHAT'S *NORMAL* GOT TO DO WITH IT?

- When QA Tests are Successful Is the Data Valid?
  - **Normal** Operations
  - **Normal** Sampling Mode
  - **Normal** Process Operating Conditions

Questions?

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