

CALIBRATION CHECKS

Presenters:

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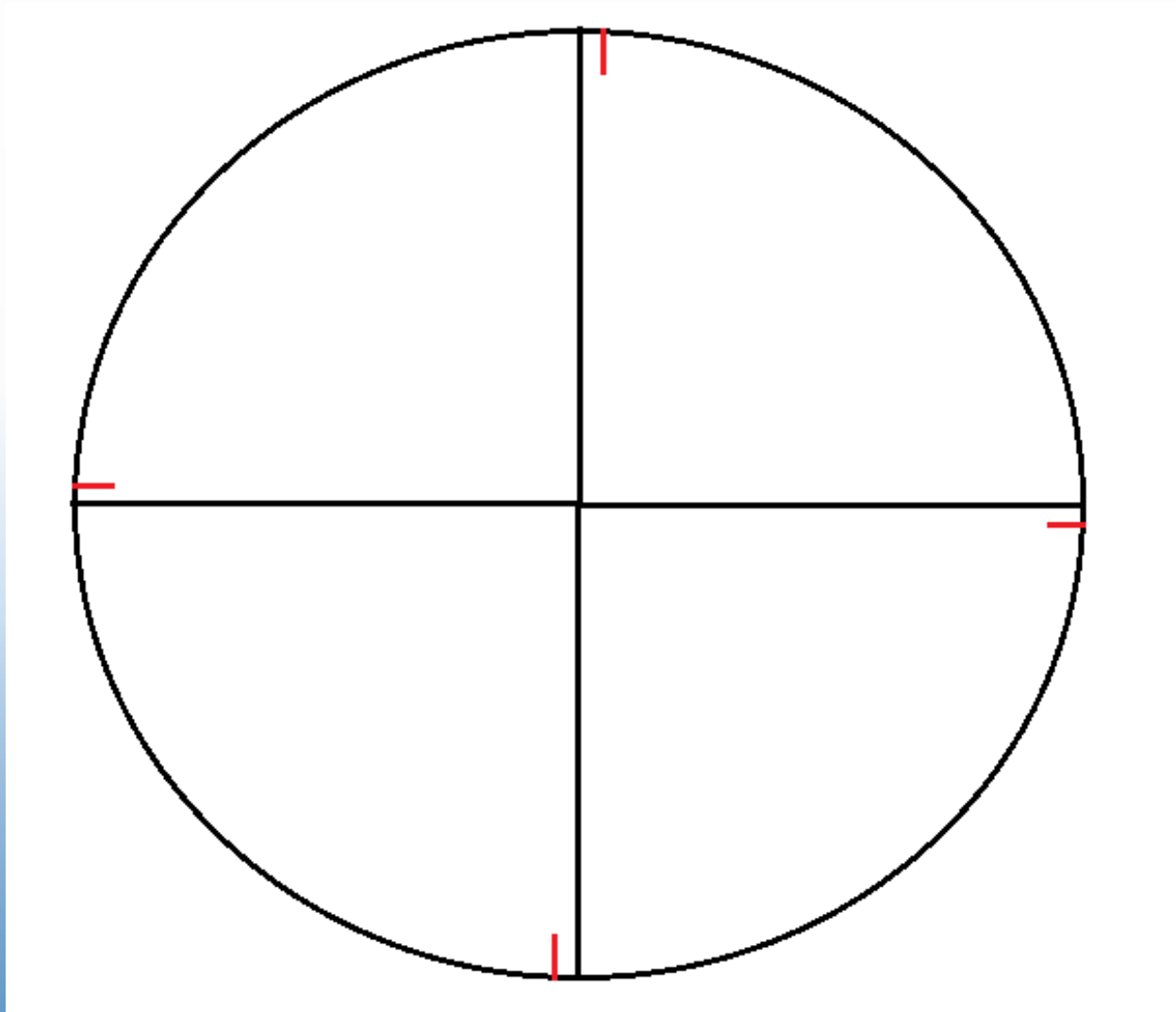
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How Does Software Validate the Hour

- At least 1 valid minute in each of the 15-minute quadrants of each hour.
- For hours of calibration or maintenance:
 - 2 valid minutes at least 15 minutes apart.
- Minimize downtime:
 - Allow a valid minute in the quadrant before starting calibration or maintenance.
 - Schedule long tests; linearity, across the top of the hour.

Hour with Quadrants



Calibration Timing and Settings

- Time of injection is primarily the time it takes for the gas to move through the probe to the analyzer.
- Avoid high concentration followed by a lower or zero concentration.
- O₂ is easier to zero or span than other analyzers.

TIME

PARAMETER	40 CFR 60	40 CFR 75
7-Day Drift	Approximately 24-hours	Approximately 24-hours (UOD)
Daily Calibration		24 + 2 clock hours
Start-up		24 + 2 UOH hours
		8-hour grace period

Late or Expired Cals

PARAMETER	40 CFR 60	40 CFR 75
7-Day Drift	Must meet 40 CFR 60, App. B criteria to pass	Must meet 40 CFR 75, App. A criteria to pass
Daily Calibration	Not addressed. EPA v. State	Regulations require data invalidation

Fail Limits

PARAMETER	40 CFR 60	40 CFR 75
7-Day Drift	1 X Appendix B, PS	1 X Appendix A, PS or MD
Daily Calibration	2 X PS – Once (Warning)	2 X PS – Once (OOC) or MD
	2 X PS – 5 times (OOC)	
	4 X PS- Once (OOC) <ul style="list-style-type: none"> • <i>Fails backwards</i> 	



Operational Status

PARAMETER	40 CFR 60	40 CFR 75
7-Day Drift	Online	Online
		≤ 50 ppm exempt
Daily Calibration	Online & Offline	Online
		Online & Offline, if determination test performed

Dual Range Analyzers

PARAMETER	40 CFR 60	40 CFR 75
7-Day Drift	Both ranges must pass, or analyzer is OOC (Guidance)	If one range fails, then analyzer is OOC (Regulation)
Daily Calibration	Online & Offline	Online
		Online & Offline, if determination test performed

Calibration Drift Gas Concentrations

PARAMETER	40 CFR 60	40 CFR 75
Calibration	Zero (0 -20%) & High (50 -100%)	Zero (0 -20%) & Mid (50 -60%) or High (80 -100%)

Instrument Air Usage

PARAMETER	40 CFR 60	40 CFR 75
7-Day Drift	Not addressed in regulations, guidance or determinations	Allowed, but must demonstrate clean of O ₂ interferents
Daily Calibration		

Non-Test Errors

e.g. Calibrating with cylinders turned off

PARAMETER	40 CFR 60	40 CFR 75
7-Day Drift	Must meet 40 CFR 60, App. B criteria to pass	Does not affect test if a calibration was performed on the same day
Daily Calibration	Not addressed. EPA v. State	Non-test has no impact and should not be reported

THE END

Questions?

