



Alternative Work Practice (AWP)



The Keys to OGI Operator Training

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- Jared Metcalf brings over 16 years of industry experience to the Montrose team where he currently serves as Managing Director, OGI USA. Prior to joining the Montrose team, Jared worked as an Operator for Natural Gas Transmission facilities. Jared has 10 years of experience in conducting and managing Optical Gas Imaging fugitive emission surveys. Jared holds an Associate of Applied Science, Instrumentation and a Bachelor of Science in Industrial Technology from Lamar University, Texas.



Overview

- Operator Training/Verification
 - 90-day Training for Certification
 - In Class Training/Infrared Theory
 - In Class Training Industry Operations
 - In Field Training
 - Sensitivity Test
 - Framing a Scene
 - 3 Angles
 - Backgrounds and their effect on visibility
 - Pipe Crawl
 - Steam and Exhaust
 - QA/QC and Audit Program



In Class Infrared Theory

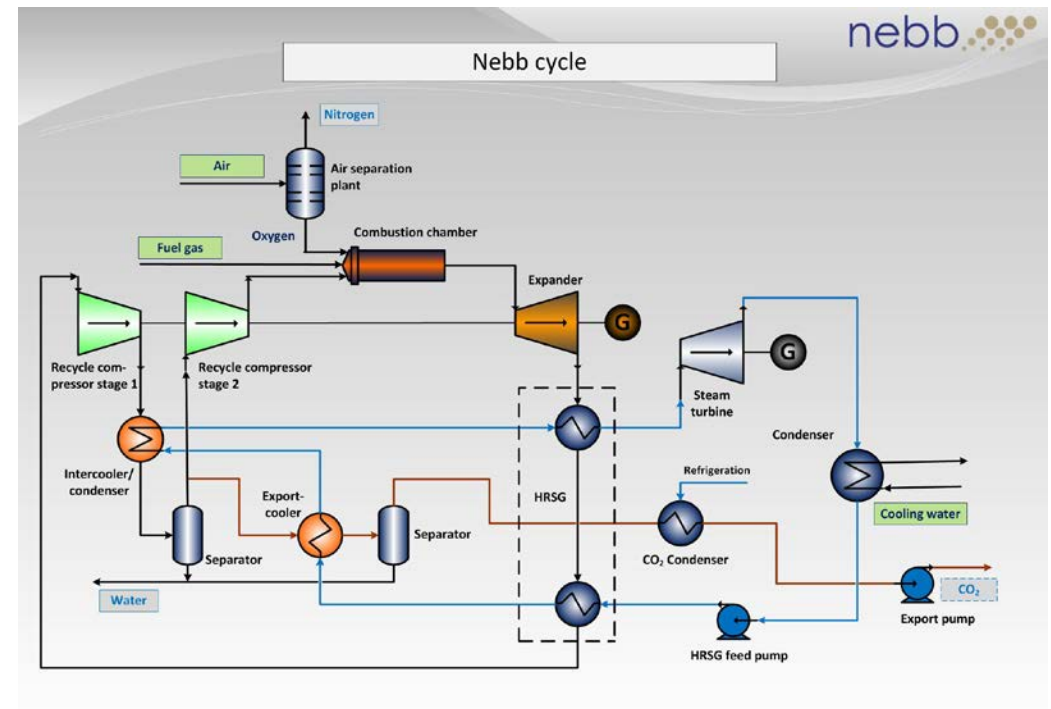
- Heat Transfer Principles
- Thermal States
- Thermal Equilibrium
- Steady State/Transient
- Infrared Theory

Optical Gas Imaging (OGI)



In Class Training: Operations In Industry

- Understand Potential Leak Points
- How Heated and Cooled Process can impact Sensitivity
- Cover the impact of the Temperature Cycles on Leak Creation
- Learn Language of Industry
- Identify Applicable Streams for Scanning



In Field Training

- Trainee starts on a 2 - man Team with Trainer
- 1st Week is Observation by Trainee
- Lead Technician Covers:
 - Sensitivity Test
 - Framing a Scene
 - Background Temps.
 - Pipe Crawl
 - Steam and Exhaust
- 2nd Week is Initial Scan Time
- 3rd through 5th Weeks are comparative Scans
- 6th through 8th Weeks are observed by Lead Tech with corrections and checks



Sensitivity Test

- Release 100% Methane at 0.5 GPH
- Record Maximum Distance where release is still visible
- Utilize range finder to determine distance
- Use range finder during scan to make sure that the maximum allowed distance is not exceeded



Framing a Scene

- Stand 6' to 10' from components
- Stand still
- View components within the camera image
- Check for movement
- If movement is seen, then identify leak source
- If no movement is present move to next scene



When Possible 3 Angles of Scan

- 1st angle should include multiple components (BIG PICTURE)
 - Identify any large leaks
 - Scan for optimal background with good Temp.
- 2nd angle one side of component
- 3rd angle on opposite side



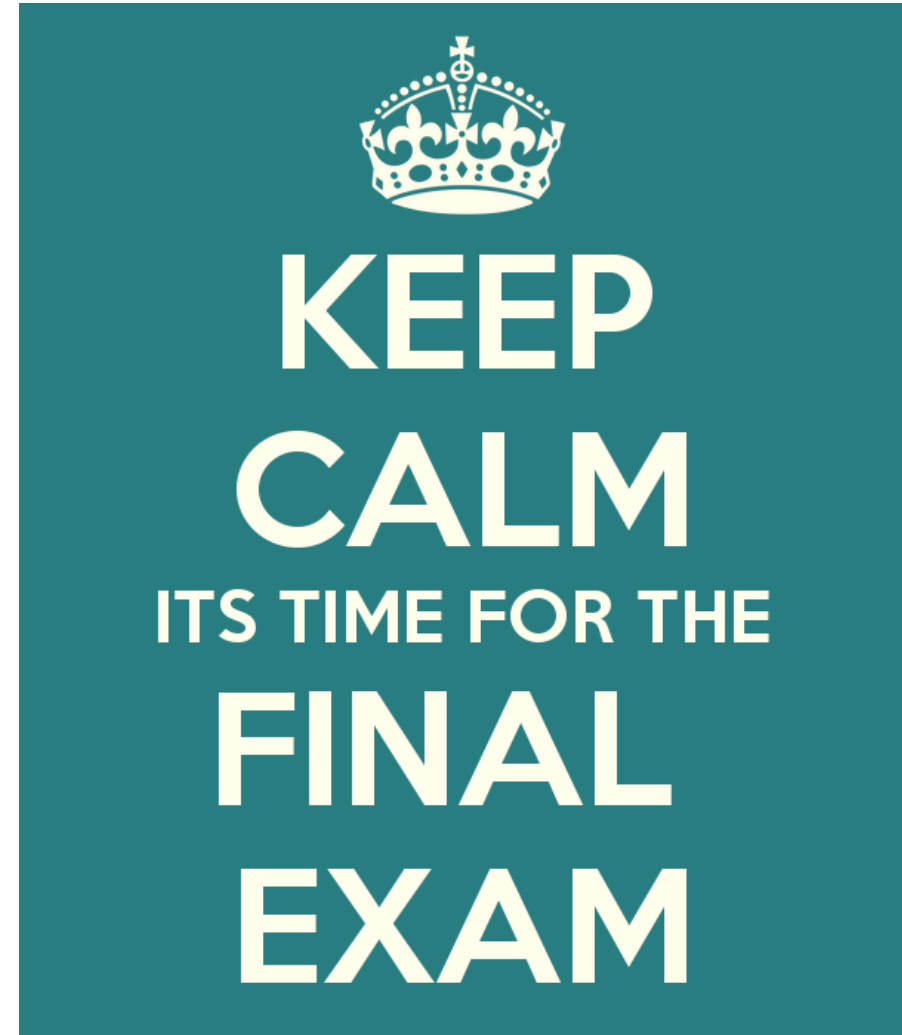
Imposter Leaks

- **PIPE CRAWL**
 - When the heat from a pipe mimics gas movement
 - Identified by looking for movement past the outline of pipe
- **STEAM**
 - Dissipates quickly
 - Methane clouds hold for a significant distance
- **EXHAUST**
 - Acts similar to steam (dissipates when heat is lost)
 - Originates at exhaust pipe (heat can be seen from great distance)



Final Test & Audits

- Observation by Trainer
- Trainer follows behind Trainee with additional camera
- Must accomplish zero missed leaks
- Quarterly audits performed on Techs
 - Announced follow
 - Unannounced review of previously scanned facility
- Daily review of documents
- 25% review of Duration Videos



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QUESTIONS?

