PROGRAM FOR TRAINING A GAS MEASUREMENT TECHNICIAN

Class # 8140

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Introduction:

There are many reasons to train Measurement Technicians. All new measurement technicians will require training to obtain the knowledge and skill set necessary to properly perform their important job. Additionally as existing measurement technicians retire or move on to "greener" pastures they will need to be replaced. Also training is required for the technician to advance in knowledge and capabilities so that they can be promoted to more demanding specialized skills. The industry standards that cover measurement also change periodically as the industry obtains more knowledge, which requires additional measurement training so that the technicians understand the changes. Additionally, there are many types of primary measurement devices utilized in the field for oil and gas measurement as well as secondary and tertiary devices. When companies acquire another company to expand their position in the industry, they acquire the other company's old equipment which may be antiquated or it may be state of the art, but unfamiliar to the technician. Technician's today must be able to support antiquated equipment while continuously expanding the knowledge required to install, operate and maintain the new advanced technologies as they are implemented. Electronic equipment has become more sophisticated and often includes communication capabilities thus remaining proficient is an ongoing challenge. Technician's today not only have to install, operate and maintain measurement equipment whether it is to measure liquids, natural gas or both, but may also be responsible for other equipment such as regulation and control, odorization, sampling and quality determination, communications and in some cases facility maintenance. Even with these added responsibilities the expectations of having quality measurement, regardless of the equipment being used remains the same. Providing technician's the necessary training they need is extremely important to make the competent and efficient.

Purpose:

The time, expense and effort put into training gas measurement technicians provide dividends in the long run. Having accurate measurement according to industry standards minimizes any potential conflicts with the other party, which is a big advantage. By assuring the company follows the latest industry standards, the exposure for litigation is greatly minimized and if litigation does occur, the company should prevail. Training also provides the technician with the why's the industry does some things, so they are less likely to make mistakes because they understand the process more fully than just on the job training by the person they are replacing, which has been a common occurrence in the past. I know of many cases of witnessing measurement at a site and the technician knew what to do, but because he did not understand what was really going on, did not perform the duties to industry standards with an audit exception resulting.

Companies who have a reputation for well trained, quality measurement technicians minimize issues and sometimes provide a competitive advantage when there are multiple lines a company can tie into which can have a significant impact on the company's bottom line. Most measurement technicians cover a large geographical area which makes any problems very inefficient. For example if a sample is caught near the hydrocarbon dew point and has to be redone because the sample was not realistic, it means an additional trip to that site. The data is analyzed by an analysts group to verify all of the measurements are high quality and to minimize lost and unaccounted for gas and or liquids. Typically multiple groups within a company may have to get involved to resolve or correct the errors resulting in unproductive use of time, energy and resources. Typically multiple groups within the company are involved in any error resolution which

results in unproductive use of time and resources. When you include the additional administrative cost to provide an adjustment or to obtain an adjustment along with the potential revenue lost from the original measurement error then this one event compounds the losses. The last thing you want to do is to provide reasons for the other party to lose confidence in your company's ability to provide accurate measurement of the quantity and quality of the product involved.

Process:

Several factors should be considered when thinking about training for your employees. Training may need to be prioritized especially in times with low product value like we are currently seeing. The following list should be considered:

1. Who needs measurement training?
    a. New employees
    b. Existing employees to refresh or enhance their knowledge
    c. Employees ready for more demanding technical expertise
2. What training is needed?
    a. Commonly used equipment
    b. New technology the company is implementing
    c. Problem areas encountered commonly in the field
    d. Should the training consists of both lecture and hands-on?
3. Who should administer the training?
    a. Employees with sufficient technical expertise, communication skills and time to develop the material
    b. Vendors who know the equipment
    c. Third party experts who know the equipment and the industry standards, as well as being capable of communicating effectively
4. Where should the training take place?
    a. Field
    b. Local office or meeting room
    c. Offsite

Once the above decisions are made a plan can be developed to custom fit your organizational needs.

Budget:

Budgeting the necessary dollars for the training may be difficult at times like these, but the training may have a positive effect on the company's bottom line that makes the training well worth it.

Training Options:

As mentioned above there are many options when it comes to providing training. Each method provides its own unique advantages and disadvantages. People learn differently. So the training that works best for one student may work the least amount for another person. Some students prefer to learn at their own speed by reading a manual where as another student learns better by a "hands-on" experience. Classroom training helps the technicians learn industry standards, various equipment options with the associated software while at the same time conveying the importance of company procedures, guidelines and safety regulations. "Hands-on" training provides the students the ability to physically see the function of the equipment with "cut-away" examples or the simulation of the "real world" is valuable in a flow-lab application. What is learned in the classroom under ideal conditions can then be taken to the field where frequently non-ideal conditions exist.

On-the-job training can be very efficient as the trainee is performing the job while being coached by someone who knows the job. However, proper training requires the trainer really know and understand what is being taught as well have good communication skills. In the past, the industry frequently utilized on-the-job training as the rule. Unfortunately, many times the trainer did not really have good skills or understanding and passed on information that was not according to industry standards. If the trainer is distracted by the next job or retirement, he may not remember to relay the proper information. The trainer may also not be a good communicator, or not have sufficient patience to answer the endless questions that may occur.

Vendor Training:

When companies lack the resources to effectively provide the desired training within the company, vendor training is another option. Manufacturers typically have their own training programs that can provide training for a specific piece of equipment, or an entire product line.

Third party vendors typically are capable of teaching about all of the equipment options as well as the current industry standards. Third party vendors generally offer both open enrollment training at a specified site and customized training at the customer's location. Vendor training can potentially be more costly upfront but usually provides more extensive training than one could get from an in-house training program. Most vendors also provide different levels of training that may be customized to fit the educational and budgetary needs of the client.

Training Program Options

Some third party training companies provide training at customer sites with and without hands-on depending on the customer location and capabilities. Another option is on-line training which includes animations, voice over presentations and refresher on line games that tests the student's retention of the material. If the on-line option is selected and hands-on experience is also desirable, the majority of the training can be performed by the employee at their convenience, any day of the week and at any time. A one day hands-on session can be scheduled with multiple attendees at the Atmos Energy Training Center measurement lab. A final test is given both in the classroom and on-line training. In order to pass the course, most clients want their students to make an 80 or above. The test is a comprehensive test with a four hour time limit. The instructor goes over the test with each student so that the student has one last chance to learn the information. One client promotes any technician who passes the test within the time provided, which is a huge incentive for the employee to pay attention and do their best.

Class Strucure

For in person training a maximum of twenty students is a typical class size which allows sufficient instructor interaction and assistance. This size group provides for better class participation and allows all students to operate the hands-on equipment being demonstrated. Classes are informal and students are encouraged to participate in class discussions, ask questions, and share past

experiences dealing with problems they may have encountered on the job. This sharing of experience is a valuable training tool and an added benefit of bringing employee's together from different locations, where they can learn from each other as well as the instructor.

Conclusion:

Due to equipment uncertainties perfect measurement may not be a reality, although it is more attainable today than ever before because of the advanced technologies currently available. In order to achieve quality gas measurement each measurement technician must be well trained and supplied with all of the tools and resources necessary to achieve maximum performance. When the measurement technicians are properly trained and work efficiently it positively impacts the corporation's bottom line. We should always strive for perfect measurement while realizing that perfect measurement rarely occurs. If we are willing to accept good measurement instead of perfect measurement we may end up with just mediocre measurement. Training for compliance is generally considered a minimum requirement. Training for competence goes above and beyond, and compliance will be the result of competency, according to Clint Morse, executive vice president of the national training and workforce performance company Mosaic. All companies in the natural gas industry should train for competency and accurate measurement.