Accreditation of Air Emission Testing Bodies for GHG measurements and data collection - opening the discussion

Scott Swiggard, PhD Golden Specialty Laboratory Technical Director/A2LA Accreditation Committee (AC) Member

Chris Gunning, A2LA Life Sciences Accreditation Manager

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A2LA American Association for Laboratory Accreditation

Key Questions

- What is accreditation?
- What is an international recognized standard?
- Can accreditation benefit the source testing industry?
- Who is A2LA?
- What is A2LA's role in the accreditation process.
- How does accreditation provide data defensibility to GHG measurements and data?

Background

- The move towards accreditation for testing and calibration labs began in the early 80s.
- The labs that gained accreditation saw benefits in increased productivity, lower retest rates, greater customer confidence, and data defensibility.
- Prior to nine years ago, the Source Testing industry self certified but recently began to join the accreditation movement.
- Currently 350+ companies gather GHG data and only 16 are accredited.
- There is still much work to do.

What is Accreditation?

Laboratory accreditation is a formal recognition by an authoritative third party of the competence of a laboratory to perform specific tests. It is important to note that independent third-party involvement in assessing laboratory competence focuses on the requirements of ISO/IEC 17025, however; additional program requirements or alternate standards can be assessed as well. The Source Testing industry capitalizes on this flexibility by offering accreditation to ASTM D7036 which is based on ISO/IEC 17025.

What Is a Standard?

ISO/IEC Guide 2: 1996 defines a standard as:

a document, established by consensus and approved by a recognized body, that provides for common and repeated use, rules, guidelines or characteristics for activities or their results aimed at the achievement of the optimum degree of order in a given context.

Standards Provide Many Benefits
From the 1991 Annual Report of ASTM:

"Standards are a vehicle of communication for producers and users. They serve as a common language, defining quality and establishing safety criteria. Costs are lower if procedures are standardized. Training is simplified. And consumers accept products more readily when they can be judged on intrinsic merit."

Standards Are Connected to Social Advancement

- Earliest standards were weights and measures
- Industrial revolution drove standardization
  - Railway time schedules – each station set the time based on high noon there (1883)
  - Railroad track widths – wheels had to be changed as a train would move to different track segments
  - Fire hose connection standardization – different connections prevented fire departments from pooling resources for large fires (Baltimore, 1904)
- Today, standardization drives industry and technology

Standards Are Everywhere

- Successful standards are invisible
  - Paper size
  - Computer connections
  - Light bulb socket sizes
- Many types of standards
  - Terminology
  - Safety
  - Health
  - Procedural
  - Compatibility

Three Broad Standardization Processes

1. Anticipatory Standardization
   - Standards developed before technology is developed and marketed
2. Enabling Standardization
   - Standards development parallels market development
3. Responsive Standardization
   - Standards developed in response to existing market conditions

Many Organizations Set Standards

- There are hundreds of organizations that set standards.
  - World Standards Services Network
    - http://www.wssn.net/
  - We're going to focus on just one that assesses standards

Language Basics of the Standards World

Term	Definition
Accreditation	ISO defines accreditation as the formal recognition by an independent body, generally known as an accreditation body, that a certification body is capable of carrying out certification. Note that STAC, A2LA, and others accredit organizations with respect to certain operations they perform. The laboratory world uses accreditation like others use certification or registration.
Certification	An independent body provides written assurance (a certificate) that the product, service or system in question meets specific requirements.
Compliance	Adherence with a regulatory requirement. In some cases, standards are regulatory requirements.
Conformance	Operations of the entity satisfy the requirements of the standard.
Registration	Certification is often referred to as registration in North America because certification work is carried out by registrars.

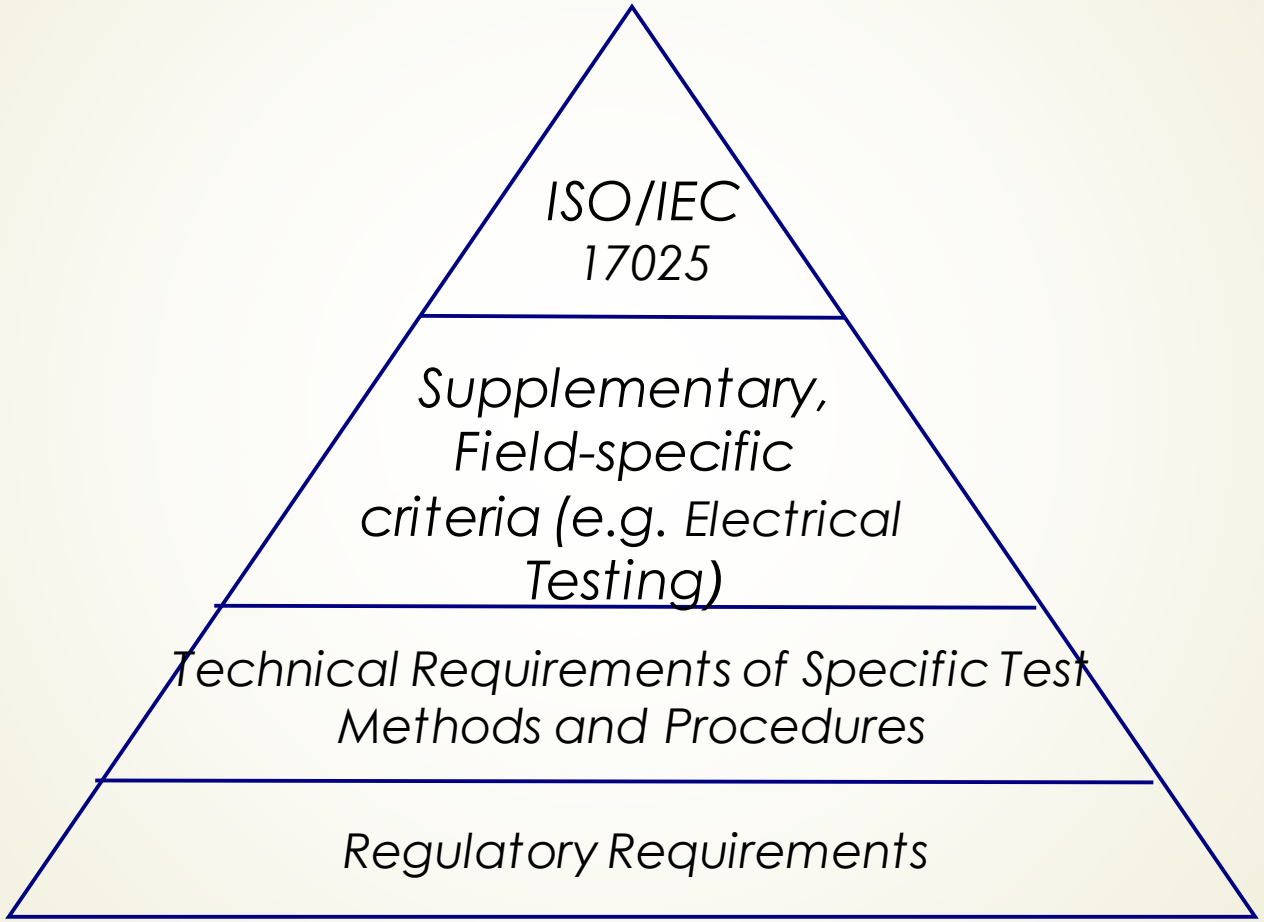
What is Accreditation?

- "third party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks" *(ISO/IEC 17000)*
- Key phrases
  - competence
  - specific…. tasks

What is Accreditation?

- Technical competence (specific tasks)
- Integrity
- Transparency
- Fairness
- Scope of Accreditation
  - products; types of test parameters types of inspections; matrices
  - measurement techniques, range, accuracy
  - test specification; test method

Accreditation Requirements



Why Seek Accreditation

- ***Why AETBs may seek accreditation:***
- **Legal requirements** - Government legislation might require accreditation, such as in the areas affecting health, safety, environment in order to provide confidence in essential services

- **Customer requirements** - Customers may require the use of only accredited laboratories to reduce their risk of taking actions based on invalid testing/calibration results

- **Marketing advantage** - The CAB might be able to gain a market advantage by having an **independent third party** evaluate their competency (**provides more assurance than self-declaration or first and second party**)

- **International Trade** - The CAB may want to ensure that testing they provide for a product/material does not have to be repeated in another country before the product can be sold

Who is A2LA

- Established in 1978
- Largest U.S. multi-discipline Conformity Assessment Body (CAB) Accreditation system
  - ***More than 2800 accreditations granted***
- Fourth largest system in the world
- Non-profit and non-governmental
- First lab accredited was an environmental lab 35 years ago and remains with us to this day!

The Accreditation Bottom Line

- Does the laboratory "*say*" what they do?
  - Do they have written documents (policies, procedures, arrangements) that meet the requirements of ISO 17025 or ASTM D7036?
- Does the laboratory "*do*" what they say?
  - Are they in compliance with their own management system and ISO 17025/D7036?
- And can they "*prove*" it with their records?
  - From training records to standards preparation to work books to customer reports to audit reports and everything in between.

Accreditation Using either ASTM D7036 or ISO/IEC 17025:2005 or both

- Evaluation of a conformity assessment body to determine technical competence
- Management system requirements
  - Technical requirements - competency
  - Used by air labs to manage and operate systems
  - Used by accreditation bodies domestically and internationally to evaluate labs

A brief discussion on the technical requirements

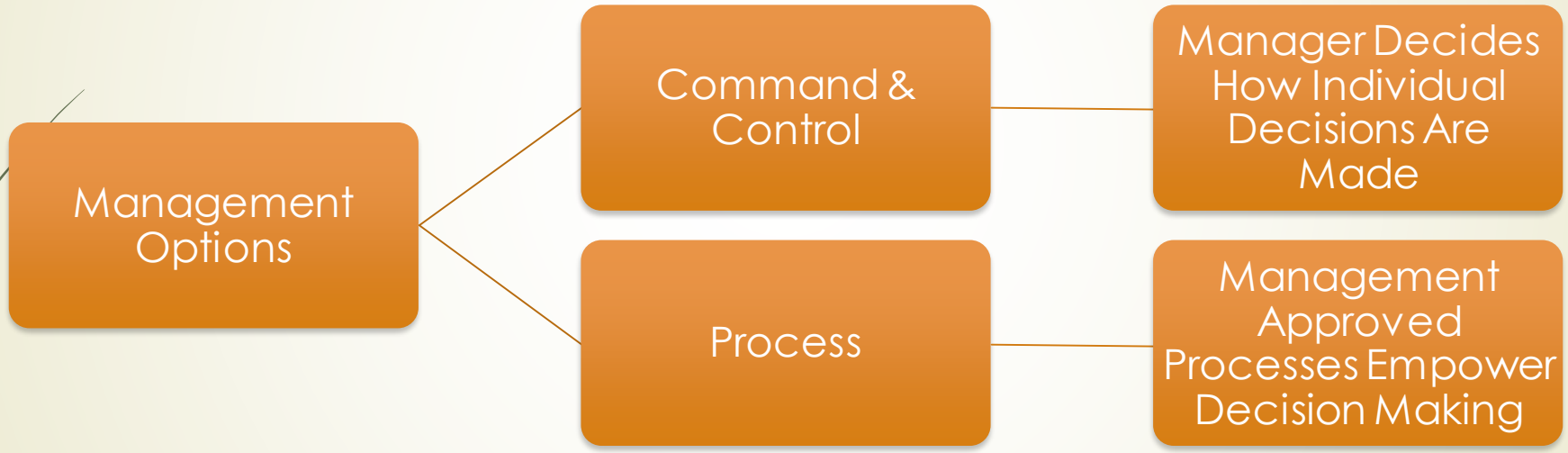
5.1 General
5.2 Personnel
5.3 Accommodation/Environment Conditions
5.4 Test Methods and Method Validation
5.5 Equipment

Note: There are more than 15 Management Requirements of the standards

Technical Requirements

5.6 Measurement Traceability
5.7 Sampling
5.8 Handling of Test Items (Samples)
5.9 Assuring the Quality of Test Results
5.10 Reporting the Results

Organizations are Managed in Two Ways



Command & Control Management Relies on Structure

1. The manager knows what to do in each situation.
2. The manager tells the subordinate what to do.
3. The subordinate does it.
4. The subordinate bears the consequences for problems o failures.
5. Each experience is new.
6. A significant portion of the AETB's in source test industry fall into this category

Advantages & Disadvantages of Command & Control Management

Perceived Advantages	Disadvantages
1. Employees Need Little Training 2. System is Flexible 3. Low cost to setup & implement	1. Information Can be Lost Over Time 2. Customer Experience Can be Inconsistent 3. Continual Improvement Programs are Rare 4. Mistakes are Repeated

Process Management Relies on Systems

- Polices, procedures, instructions, and framework define a management system.
- Trained employees work in accordance with policies, procedures, and instructions within the framework.
- Performance data are collected and used to guide management system improvements.
- Policies, procedures, instructions, framework are revised and employees are retrained.
- Operations improve, employees are engaged.

Advantages & Disadvantages of Process Management

Advantages	Perceived Disadvantages
1. Disciplined & Structured Approach 2. Consistent Customer Experience 3. Continual Improvement is a Foundation 4. Requires less on-hands management time	1. Development and Documentation of Processes is Resource Intensive 2. System Changes are Structured 3. System Expansion/Creep

Registrars and Accreditation Bodies Evaluate Standards Conformance

Third party independent assessments perform two important functions:

1. Verify structure: Verification that required systems – if implemented - are in place to achieve conformance with a standard.
2. Verify function: Verification that required systems are in implemented.

In short, assessments evaluate the structure and function of an organization's systems relative to the requirements of standards and the procedures that the organization establishes to conform to standards.

Standards Can be Adopted Without Registration, Certification, or Accreditation

- Confirmation of conformance by a recognized registrar or accreditation body is seen as the most objective option, but current regulations allow for:
  - Make a self-determination and self-declaration of conformance.
  - Engage an interested or vested party, such as a client or customer, to confirm conformance.
  - Seek confirmation of its self-declaration by a third party.

Benefits to Laboratories

- Credential to qualify for testing
- Regular, objective "check-up"
- Entrée to some markets
- Increased lab productivity
- International recognition & acceptance
- Staying on "cutting edge"
- Discounts for liability insurance
- Improved performance
- Validation of traceability
- Consistent assessments
- Ability to provide feedback
- Continued Improvement to process, systems, and training

Benefits to Users of Data

- Improved data usability;
- Improved data defensibility;
- Easier analyst training using a well-documented standard;
- Institutes a "Qualified Individual" performing the analysis;
- Uniformity of laboratory documentation and processes;
- Improved analytical processes through established documentation and review processes;
- Easier problem identification due to more complete documentation procedures;
- Improved data defensibility and customer confidence; and
- Improved customer confidence in safeguarding the public health and the environment

Self Certification vs. Third Party Accreditation - Discussion

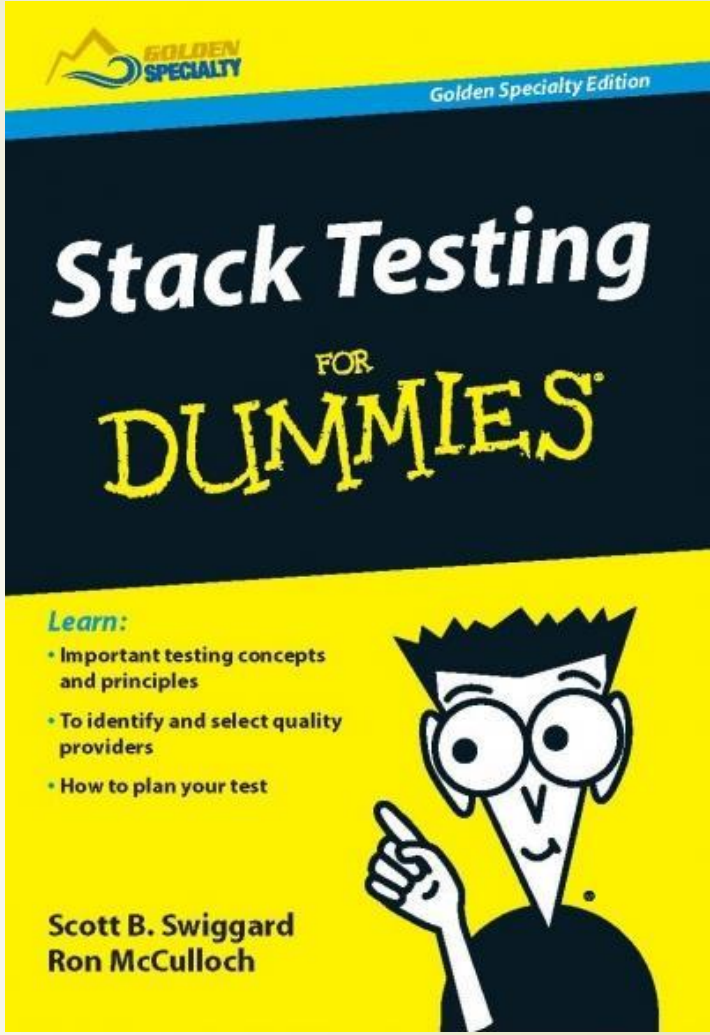
- Current regulations allow for self certification
  - Ineffective as the organization has a vested interest in the certification.
  - Assessing ones own work is difficult at best
  - Assessors do not normally have adequate training on the standards or assessing techniques
- Third Party accreditation
  - Independent assessment of compliance to standards and competence to perform specific tasks
  - Assessors with adequate training and technical competence to perform an in-depth assessment

Questions/Disscussion?

For Further Information

Contact: Scott Swiggard
Phone: 281 984 7021
Email: sswiggard@goldenspecialty.com

Contact: Chris Gunning
Phone: 240 575 7481
Email: cgunning@A2LA.org



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