

Workcred / APLU / UPCEA Manufacturing Presentation

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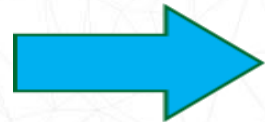
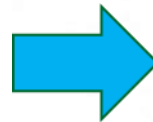
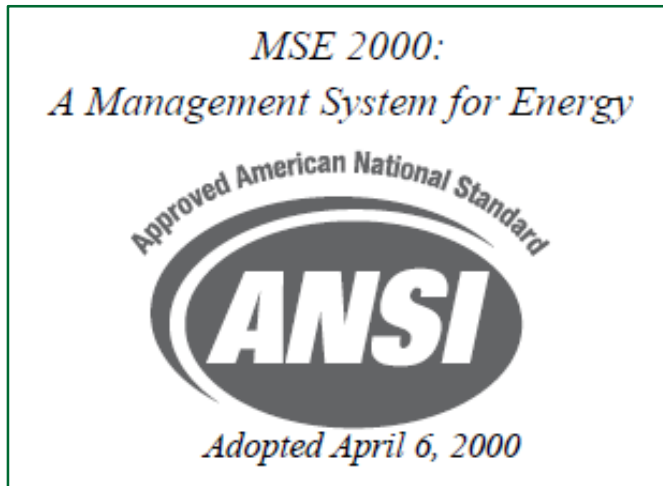
December 11, 2019

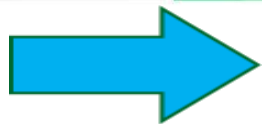
10:15 - 11:15 am EST

Agenda Overview

- IEnMP Impetus
- Entity Formation
- Organizational Structure
- Operations Launch
- Current Status
- Q&A / Group Discussion

Continual Improvement Program for Energy Management?
(US DOE / AMO 2005)





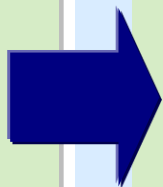
Verify Energy Savings with SEP Program

SEP requires plants to meet the ISO 50001 energy management standard and verify the savings they achieve.

ISO 50001

Components in place:

- Top Management
- Energy Team
- Policy
- Planning
- Baseline
- Performance Metrics



Superior Energy Performance

Single facility ISO 50001 conformance with verified energy performance improvement



“External verification and validation is critical. Certification adds to the confidence in calculations and savings.”

Nissan,
Smyrna, TN

Why EnMS Skills Matter

- An effective ISO 50001 Energy management system (EnMS) requires skills from two different communities

1. Management system auditors
(MSS Auditors)

Expertise in Management
System Business Processes



2. Energy efficiency experts
(EE Experts)

Expertise in Energy
Performance

- Without both skills, risks to an effective EnMS include:
 1. MSS Auditors: lack of measurable energy performance improvement due to inability to assess it
 2. EE Experts: lack of top management support due to focus on technical processes

Meeting the Skills Challenge

- DOE recognized a skills gap early in the development of ISO 50001
- Determined that professionals certifications were needed to:
 - Demonstrate competence in key areas
 - Provide market differentiation for organizations seeking skilled professionals
 - Ensure international relevance by adhering to ISO/IEC 17024 standards
 - Avoid repeating the lessons learned from initial uptake of other management systems
- Established the Institute for Energy Management Professionals

IEnMP Professional Credentials

- Focus on three skills:
 - EnMS implementation
 - ISO 50001 certification auditing (initially including SEP)
 - SEP Energy performance improvement verification
- Competence is determined by a combination of education, experience, and computer-based exam
- Exams
 - based on a job task analysis developed by a committee of peers
 - given at local test centers at candidate's convenience
- Recertification every 3 years
- Per ISO/IEC 17024 requirements, DOE training is offered separately through Georgia Tech

50001 CP EnMS

50001 Certified Practitioner in Energy Management Systems (50001 CP EnMS)

Purpose:

Defines market standard for identifying professionals with specialized EnMS implementation skills

What is it?

- demonstrates competence in the implementation of ISO 50001:2018
- ISO/IEC 17024 accredited, internationally accepted certification
- Based on a combination of education, experience, and computer-based exam

Target Audience- all sectors

- energy efficiency professionals
- consulting engineers
- large end users
- management system auditors

114 certified professionals to date

50001 EnMS Practitioner in Training

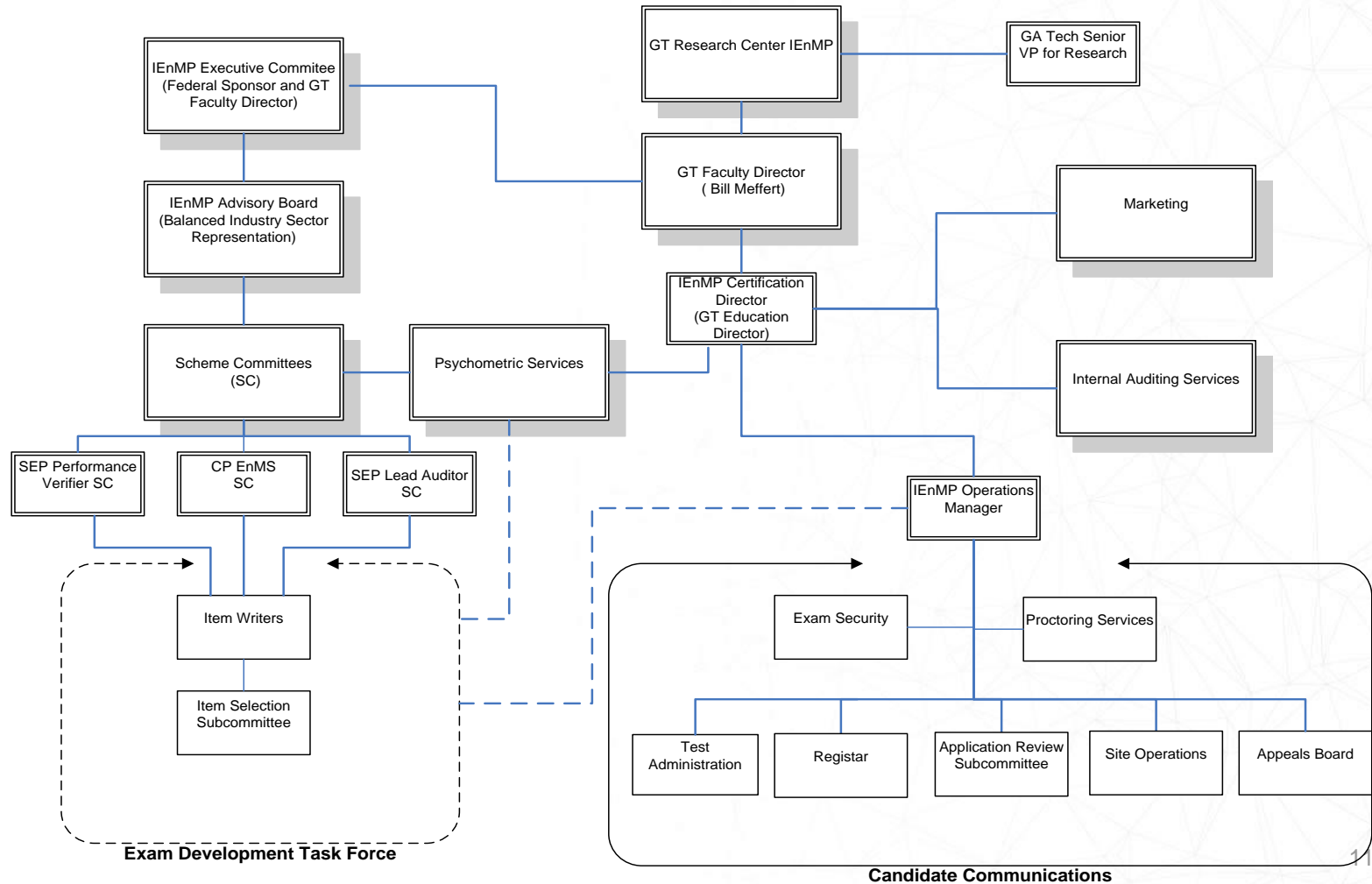
- Purpose
 - Provides early-career recognition for expertise in ISO 50001 energy management systems
- Benefits
 - Provides market distinction and reduces by one year the qualifying work experience required for 50001 CP EnMS
- Eligibility
 - Open to any candidate with a four-year degree or higher in energy management, engineering, architecture, science or math.
 - Based on evidence of successful completion of the 50001 CP EnMS course with knowledge checks (online or classroom).
 - 4 years to complete experience requirements and pass 50001 CP EnMS exam

Entity Formation

- Decision to establish IEnMP at Georgia Tech (GT)
 - Existing relationship with the DOE Advanced Manufacturing Office to test implementation of ISO 50001 / SEP programs
 - MEP Network with extensive experience in manufacturing
- Established within Enterprise Innovation Institute (GTRC)
 - DOE / LBNL entered into a contract with EI2 / GTRC
 - ✓ Bylaws were established for IEnMP under this agreement
- Objective to spin-off IEnMP as 501c3 (2018)

Institute for Energy Management Professionals (IEnMP)

Organizational Chart



Operations Launch

- Operations Setup
 - Established procedures for managing the candidates
 - ✓ Formed an Application Review Subcommittee to review a candidate's experience
 - Leveraged volunteers for item writing for the CP EnMS certification
 - ✓ Many of the contributors were from the Scheme Committee or identified SMEs
 - Worked with GT for exam delivery.
 - ✓ Contracted with a vendor's platform for managing the item bank and exam delivery
 - ✓ Coordinated proctoring exams after training.
 - ✓ Maintained a firewall between training and the exam delivery
 - ✓ Conducted a Beta exam to establish metrics for psychometric evaluation
 - Applied for ANSI 17024 accreditation and were approved.
 - Applied for ANSI scope extensions for the additional certifications, following the same process as done for CP EnMS.

Current Status

- Operations Transitions
 - Established relationships with other countries to expand the certifications globally.
 - Shifted from event-based exam delivery to a platform with a global network of testing centers.
- Formed a 501c3 non-profit corporation.
- Established a contract for IEnMP directly with the DOE.
- Continue to maintain ANSI 17024 accreditation for all certifications.

Guiding Questions

1. What are the opportunities for other universities to develop a similar model in other skill areas and occupations?
2. What is the impact of credentialing programs requiring experience in order to be incorporated into a baccalaureate degree curriculum?

Thank you!