



U.S. DEPARTMENT OF
ENERGY | Energy Efficiency &
Renewable Energy



Certified Personnel Supporting the Superior Energy Performance™ Certification Program

January 29, 2014

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Office

Superior Energy Performance™ Certification

A certification and recognition program for facilities demonstrating energy management excellence and sustained energy savings.

Certification Requirements: An ANSI-ANAB Accredited Verification Body conducts a third-party audit to verify the following:

1. Energy management system conformance to ISO 50001
2. Applicant meets energy performance improvement and additional requirements that have been codified under the ANSI/MSE 50021

ISO 50001 is a foundational tool that any organization can use to manage energy.

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

ISO 50001



SEP Performance Criteria for Achieving Performance Levels

SEP offers two pathways to achieve SEP certification at Silver, Gold, or Platinum levels.

| Performance Characteristics | | Silver | Gold | Platinum |
|-----------------------------|--|---|---|---|
| Energy Performance Pathway | Energy Performance Improvement | Meets a specified energy performance threshold over the last 3 years: | | |
| | | 5% | 10% | 15% |
| Mature Energy Pathway | Energy Performance Improvement | Meets 15% energy performance improvement threshold over the last 10 years. | | |
| | Score on Best Practice Scorecard (out of 100 total points) Uses Best Practice Scorecard to earn points for energy management best practices and energy performance improvements. | <ul style="list-style-type: none"> At least 35 points Minimum of 30 points for energy management best practices | <ul style="list-style-type: none"> At least 61 points Minimum of 40 points for energy management best practices and 10 points for energy performance (<u>beyond</u> 15% over the last 10 years) | <ul style="list-style-type: none"> At least 81 points Minimum of 40 points for energy management best practices and 20 points for energy performance (<u>beyond</u> 15% over the last 10 years) |

Certified Professionals that Support SEP

Superior Energy Performance™ is building workforce capacity for industrial energy management implementation and measurement & verification.

Training and skill are required for appropriate application of the ISO 50001 and SEP standards, and to conduct the SEP certification audit.

▶ **Certified Practitioners in Energy Management Systems:**

Assist facilities in implementing an energy management system that conforms to ISO 50001 and preparing facilities to meet SEP requirements.

▶ **SEP Lead Auditors:**

Assess a manufacturing plant's management system conformance to ISO 50001 and additional SEP requirements

▶ **SEP Performance Verifiers:**

Assess a manufacturing plant's conformance to the (1) measurement and verification protocols and (2) energy performance improvement levels defined by the SEP program.

Certified Practitioners in EnMS

Certified Practitioners in EnMS provide critical technical assistance to industrial facilities that want to become certified to ISO 50001 and SEP.

Knowledge competencies and performance skills:

- Management Responsibility
- Energy Policy & Planning
- Implementation and Operation
- Checking
- Management Review
- Energy Analysis
- Opportunities
- Significant Energy Uses
- Relevant Variables
- General Energy Review
- Energy Performance Indicators, Baselines, and Energy Performance
- Objectives, Targets, and Action Plans
- Procurement and Design
- Operational Control
- Monitoring, Measuring and Analysis
- SEP standards and protocols

The Certified Practitioner in EnMS credential is a prerequisite for becoming a SEP Lead Auditor or SEP Performance Verifier.

SEP Lead Auditor

The SEP Lead Auditor has in-depth knowledge of SEP certification and understands the process for how an organization can become certified.

Knowledge competencies and performance skills*:

- Identify and apply SEP requirements for SEP audit for initial certification and recertification
- Objectives of SEP audit (Stage 1, Stage 2-Surveillance and Recertification Audits)
- Evaluation SEP audit components Stage 1, Stage 2-Surveillance and Recertification Audits.
- Confirmation of energy performance actions and trends.
- Consequences if SEP recertification requirements are not met.
- Differentiate ISO 50001 conformance with the energy performance requirements of SEP, and demonstrate the key components that need to be considered in constructing a valid baseline for the SEnPI.
- Energy Performance

* in addition to Certified Practitioner in EnMS competencies and performance skills

SEP Performance Verifier

The SEP Performance Verifier applies energy efficiency engineering and statistics to consistently and fairly assess plant energy performance improvement.

Knowledge competencies and performance skills*:

- SEP Energy Performance Improvement Requirements
- Model Basic Concepts
- Calculations for a Facility
- Time periods for baseline and reporting period
- Model Validity
- Using Adjustment Models to determine Energy Performance Improvement Relative to Baseline
- Bottom-up Sanity Check
- Converting derived energy sources to primary energy
- Calculating consumption of energy
- Data quality

* in addition to Certified Practitioner in EnMS competencies and performance skills

Value of Personnel Certification for SEP

- Wide variety of methods for personnel certification with varying degrees of credibility in the marketplace.
 - Registry – A list of people who have met pre-defined qualifications
 - Certificate – based on a course(s) or training with an instructor type examination at the end
 - Certification – third-party assessment that an individual has obtained the knowledge and skills
- Personnel certification
 - Strict ANSI requirements with a scientifically developed exam
 - Guarantees individuals will have the skill sets required and are competent
 - Helps with international recognition

ANSI/ISO/IEC 17024 accredited certification

ANSI ISO/IEC 17024 Accreditation:

- Scientifically developed exam and strict controls on conflict of interest provides greater assurance that individuals will have the necessary knowledge and skills to be competent

Elements:

- Certification Scheme
- Scope and Job Task Analysis (Blueprint)
- Both training and professional exam are based on the Scope and Blueprint
- ANSI requires a firewall between training and professional qualification exams
- **Personnel Certification Body (PCB):**
An organization that develops and manages professional qualifications and associated exams.
- **Personnel Training Organization (PTO):**
An organization that provides training.

For more information, see: www.eere.energy.gov/energymanagement/assistance.html

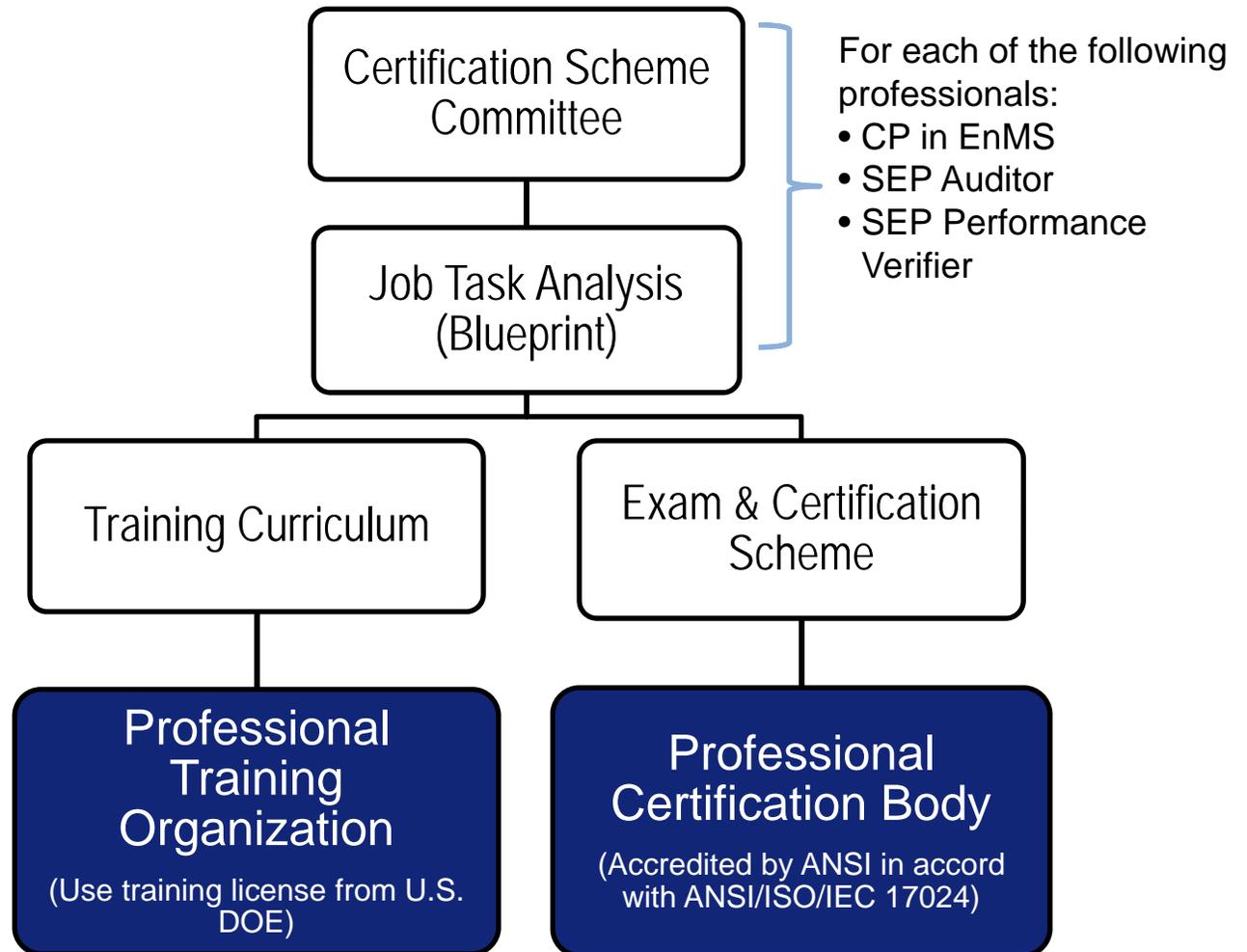
Professional Certification Framework

Committees of experts were developed for each type of professional

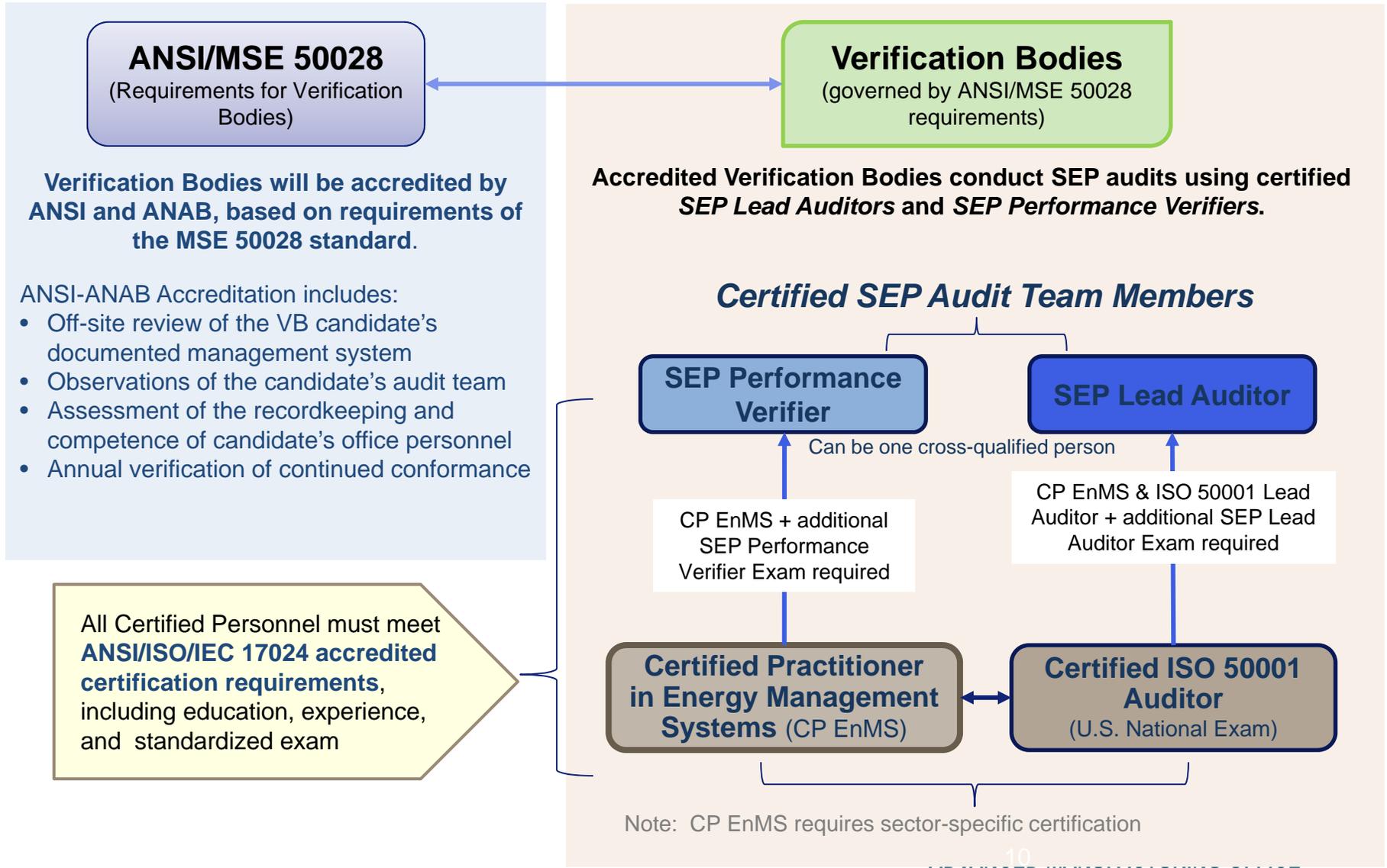
List of required knowledge and performance topics (skill set) were defined and reviewed by a separate expert group

Training and exam based on Job Task Analysis (JTA) Blueprint

Training and exams administered through selected organizations



SEP Verification Bodies & Certified Personnel



Current Status

- ▶ **Training Organizations:** DOE has granted a training license to two teams of training organizations:
 - Georgia Tech Research Corporation & Association of Energy Engineers
 - UL DQS, Inc. & partner organizations
- ▶ **Personnel Certification Body:** Institute for Energy Management Professionals was established to certify personnel in support of SEP.
- ▶ **Certified Personnel**
 - 77 Certified Practitioner in EnMS
 - 20 SEP Performance Verifiers
 - 10 SEP Lead Auditors
- ▶ **SEP Certification**
 - 17 facilities certified through SEP demonstration projects with U.S. DOE.
 - Facility savings ranged from 5% over three years to 41.9% over 10 years.
 - SEP is now open for any U.S. facility to apply for certification.

Thank You

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http://www1.eere.energy.gov/manufacturing/tech_assistance/betterplants/index.html

<http://www.superiorenergyperformance.energy.gov/>



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