CE 8000:

Data Center Energy Practitioner (DCEP)

U.S. DEPARTMENT OF ENERGY

Elearning
3-day Instructor Led
Blended Learning

Critical Environments
Professional Development Program

Resilience.
Education.
Credentialing.

ICOR

The International Consortium
For Organizational Resilience

Data Center Energy Practitioner (DCEP)

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Audience: Those with in-depth knowledge of HVAC, Electrical, and IT-equipment. A prequalification application is required. Requirements include data center design / operation experience, a technical data center degree, or combination of both.

Program Description: The main objective for the DCEP Program is to raise the standards of those involved in energy assessments of data centers to accelerate energy savings in data centers. The purpose of the course is to train participants on how to use the Data Center Profiler (DC Pro) and Air Management Assessment Tools. Participants will use these tools developed by the DOE for evaluating major data center systems in the course. There are 2 program levels—Level 1 (Generalist) and Level 2 (Specialist). The outline described below shows both program levels offered over a 3-day timeframe.

Day 1 Generalist: 8 Competency Areas

8000.1 Introduction
1. Objectives and Overview
2. Resources

8000.2 DC Pro Overview
1. Benchmarking and PUE
2. Overview of DC Pro & PUE Estimator

8000.3 IT Equipment
1. IT Equipment Energy Use
2. Provisioning and Minimizing Waste

8000.4 Air Management
1. Environmental Specifications and Metrics
2. Airflow and Temperature Management

8000.5 Cooling Systems
1. Air– and Liquid-Cooled Systems
2. Chilled-Water Plant

8000.6 Electrical Systems
1. Causes of Energy Inefficiencies
2. Electrical Power Chain

8000.7 Assessment Process Manual
1. Objectives of DCEP Assessments
2. DCEP Assessment Process

8000.8 Data Center Profiler Case Study
1. Input Steps / Results
2. Abbreviations and Acronyms

Credentials

The Data Center Energy Practitioner (DCEP) certification exams (Generalist and Specialists) are included in the course fees. It is an open-book multiple choice exam with a mix of problem solving and knowledge questions. Passing is 75%. There is a waiting period of 30 days to retake exam(s).

Days 2-3 Specialist: 8 Competency Areas

8000.9 HVAC Specialist
1. Resources
2. Performance Metrics

8000.10 Air Handlers and Air Conditioners
1. HVAC Systems & Airside Economizers
2. Indirect Evaporative Coolers & Energy Efficiency

8000.11 Liquid Cooling
1. Why and When to Consider Liquid Cooling
2. Cooling Configurations

8000.12 Chilled Water Plants
1. Metrics to Identify Energy Efficiency Opportunities
2. Optimizing Energy Usage / Design Considerations

8000.13 Cooling System Controls
1. Temperature, Humidity, and Airflow Control
2. Cooling Plant Control & IT Equipment Integration

8000.14 Assessment Process
1. Role and Purpose of DCEPs
2. DCEP Assessment Process

8000.15 Modeling Data Center HVAC Systems
1. Modeling Energy Usage
2. Annual Energy Usage vs. Annual Energy Cost

8000.16 Environmental Requirements
1. Temperature and Humidity Specifications / Compliance Metrics RCI
2. Recommended and Allowable Ranges (ASHRAE/NEBS)

8000.17 Airflow and Temperature Management
1. Goals, Results, Data Gathering, & Measures
2. Energy vs. Thermal Performance

8000.18 DOE Air Management Tool
1. DOE Tool Suite & Air Management Tool
2. Application Example, Input Steps and Results

Conducting Energy Assessments of Mission-Critical Environments

Aligning Mission-Critical Environments Education & Credentialing Programs to the Workplace

Recognized globally for its vendor-neutral, standards-based education programs, ICOR's certification competency areas align to specific jobs or job areas in the critical environment workplace.

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