



## DCEP Generalist Training

- 7:45 Registration (15 minutes)**
- 8:00 1. Generalist Training Introduction (30 minutes)**
  - Objectives
  - Overview
  - Resources
- 8:30 2. Data Center Profiler (DC Pro) Overview (40 minutes)**
  - Overview of Benchmarking and PUE
  - Overview of DC Pro
  - Introduction to PUE Estimator
- 9:10 3. IT Equipment (40 minutes)**
  - IT Equipment Energy Use
  - Provisioning and Minimizing Waste
  - Best Practices
- 9:50 Break (10 minutes)**
- 10:00 4. Air Management (60 minutes)**
  - Environmental Specifications and Metrics
  - Airflow and Temperature Management
  - Best Practices
- 11:00 5. Cooling Systems (60 minutes)**
  - DX and Chilled-Water Systems
  - Liquid-Cooled Systems
  - Best Practices
- 12:00 Lunch (60 minutes)**
- 1:00 6. Electrical Systems (50 minutes)**
  - Causes of Energy Inefficiencies
  - Electrical Power Chain
  - Best Practices
- 1:50 7. DCEP Assessment Process Manual (20 minutes)**
  - DCEP Assessment Process Manual
  - DCEP Assessment Process
- 2:10 Break (10 minutes)**
- 2:20 8a. Data Center Profiler (DC Pro) Tool Case Study (40 minutes)**
  - Input Steps
  - Results
- 3:00 8b. DOE Electrical Power Chain Tool Introduction (20 minutes)**
  - Input Steps
  - Results
  - Abbreviations and Acronyms
- 3:20 Exam (20 minutes)**
- 3:40 End of Generalist Training/Exam**

## DCEP HVAC-Specialist Training (Day 1)

- 8:00** **Registration (15 minutes)**
- 8:15** **9. HVAC Specialist Training Introduction (20 minutes)**  
Overview  
Resources
- 8:35** **13. Air Handlers and Air Conditioners (80 minutes)**  
HVAC Systems Overview  
Airside Economizers  
Indirect Evaporative Coolers  
Energy Efficiency Opportunities  
Best Practices
- 9:55** **Break (10 minutes)**
- 10:05** **14. Liquid Cooling (70 minutes)**  
Why Liquid Cooling?  
When to Consider Liquid Cooling  
Cooling Configurations  
Best Practices
- 11:15** **Lunch (60 minutes)**
- 12:15** **15. Chilled Water Plants (60 minutes)**  
Metrics to Identify Energy Efficiency Opportunities  
Optimizing Energy Usage  
Design Considerations for Data Centers  
Best Practices
- 1:15** **16. Cooling System Controls (45 minutes)**  
Temperature, Humidity, and Airflow Control  
Cooling Plant Control  
Feedback and Diagnostics  
IT Equipment Integration  
Best Practices
- 2:00** **Break (10 minutes)**
- 2:10** **18. Modeling Data Center HVAC Systems (75 minutes)**  
Levels of Modeling Detail  
Modeling Energy Usage  
Annual Energy Usage vs. Annual Energy Cost  
Abbreviations and Acronyms
- 3:25** **End of HVAC Specialist Training Day 1**  
**17. DCEP Assessment Process (Self Study)**  
Role and Purpose of DCEPs  
Objectives of DCEP Assessment  
DCEP Assessment Process

## DCEP HVAC-Specialist Training (Day 2)

- 8:00** **Registration (15 minutes)**
- 8:15** **10. Environmental Requirements (45 minutes)**  
Temperature and Humidity Specifications  
Recommended and Allowable Ranges (ASHRAE/NEBS)  
Compliance Metric RCI  
Best Practices
- 9:00** **11. Airflow and Temperature Management (80 minutes)**  
Air Management Goals and Results  
Energy vs. Thermal Performance  
Air Management Measures  
High-Level Air Management Metrics  
Data Gathering and Management  
Best Practices
- 10:20** **Break (10 minutes)**
- 10:30** **12. DOE Air Management Tool (70 minutes)**  
DOE Tool Suite  
DOE Air Management Tool  
Application Example  
Input Steps and Results
- 11:40** **Lunch (60 minutes)**
- 12:40** **Exam (40 minutes)**
- 1:20** **End of HVAC Specialist Training/Exam**



**CENTER OF  
EXPERTISE**  
FOR ENERGY EFFICIENCY IN DATA CENTERS

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