

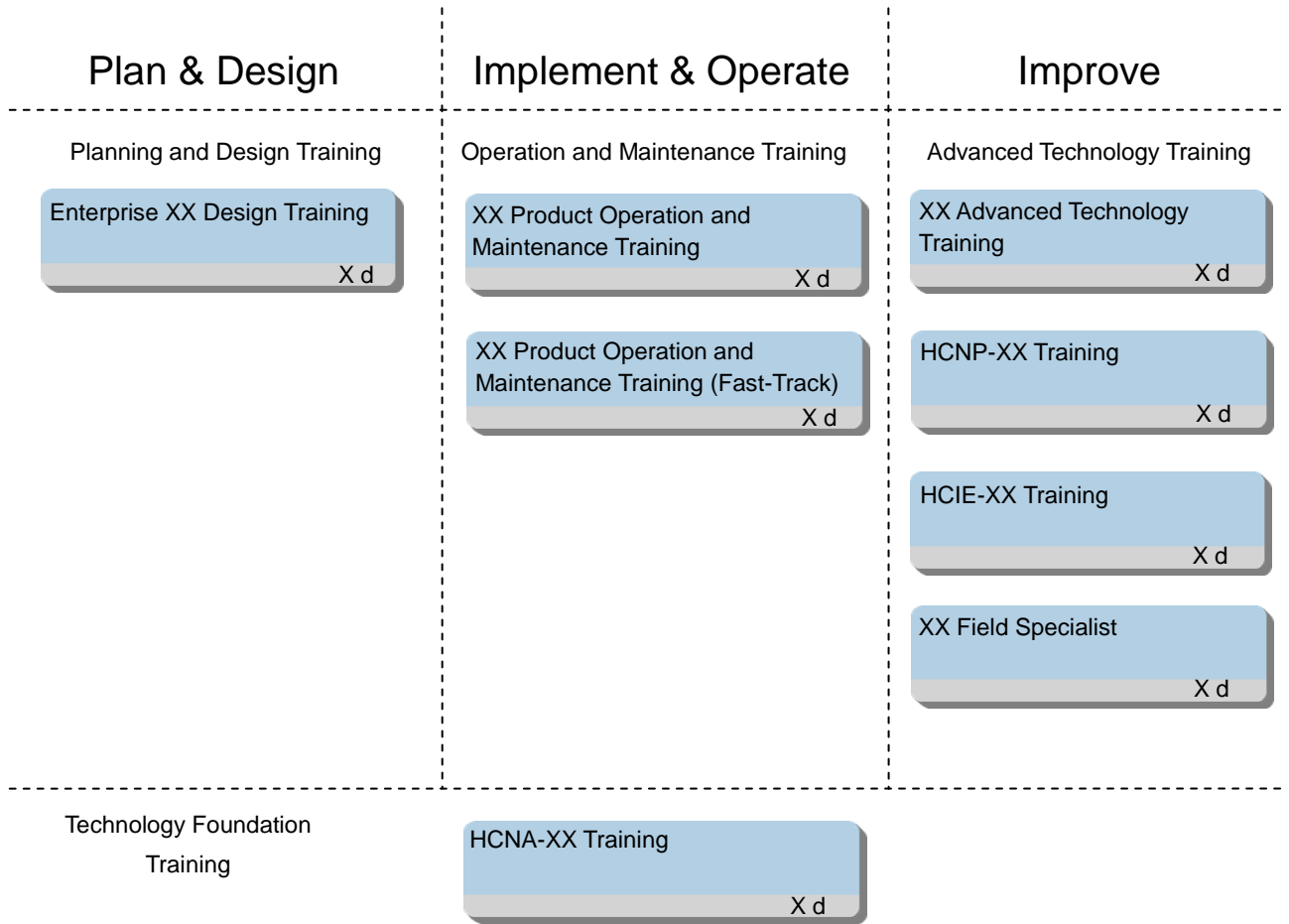
Training Description for Network Energy



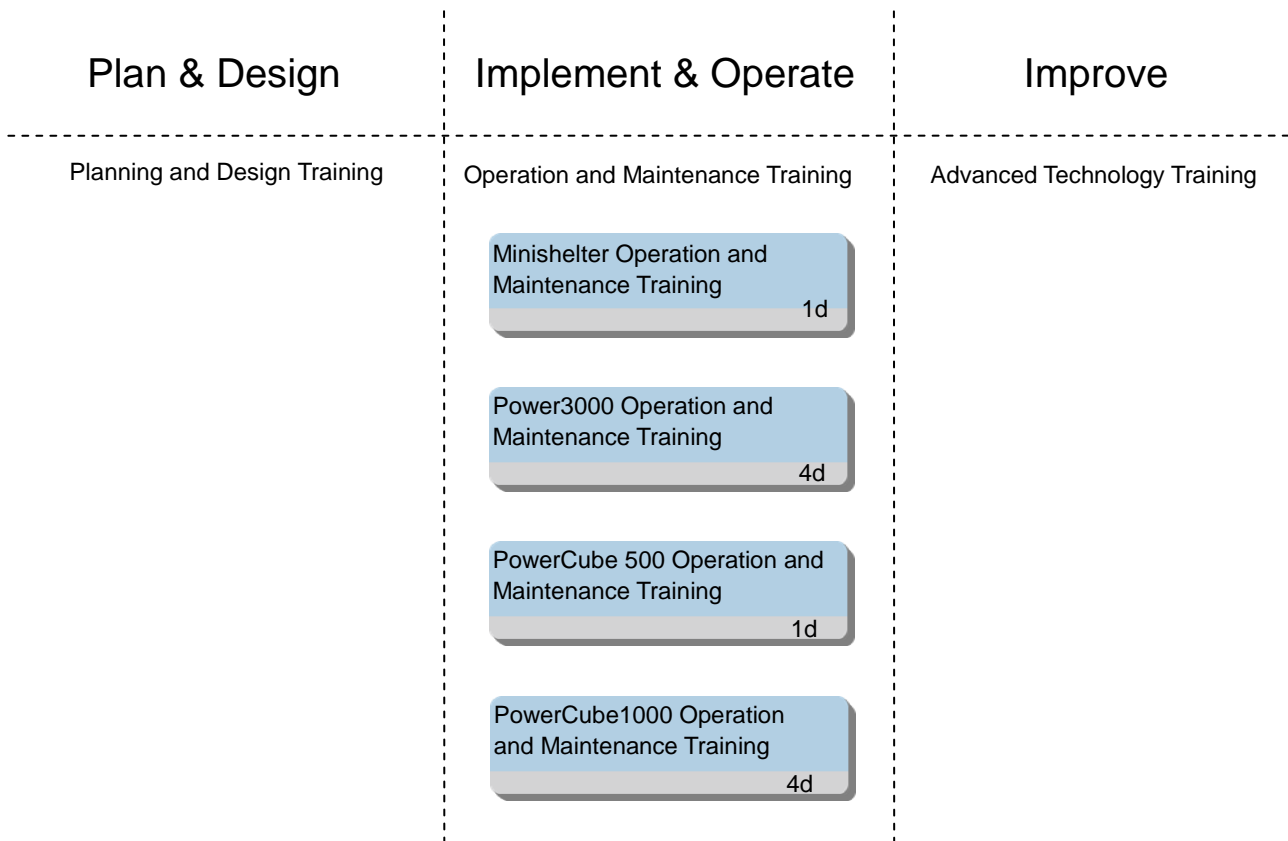
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1 Training Path



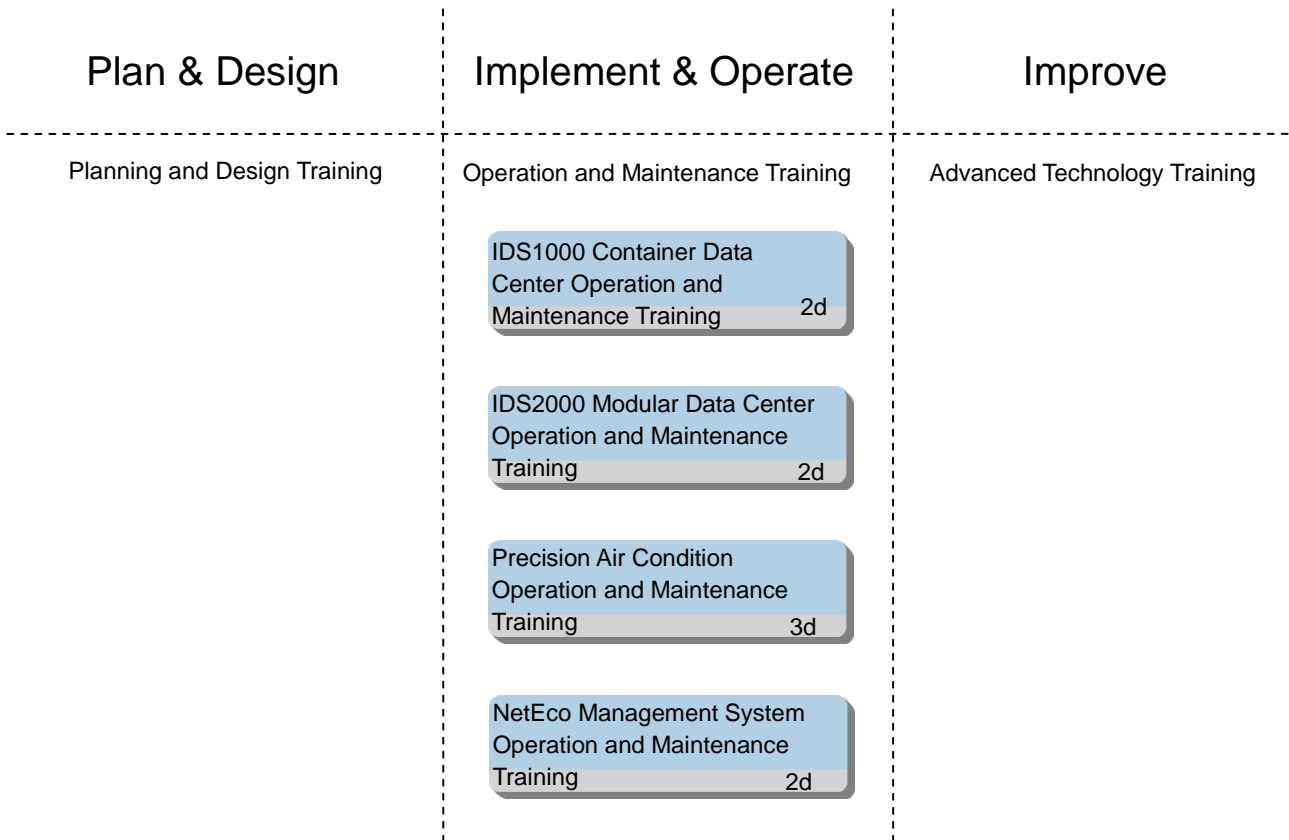
1.1 Power Supply Training Path



Elective Guide

- The training programs in the path include Minishelter, Power3000, PowerCube500, PowerCube1000 products trainings.
- Operators and Maintainers, Managers are proposed to learn the technology foundation, operation and maintenance training programs respectively.

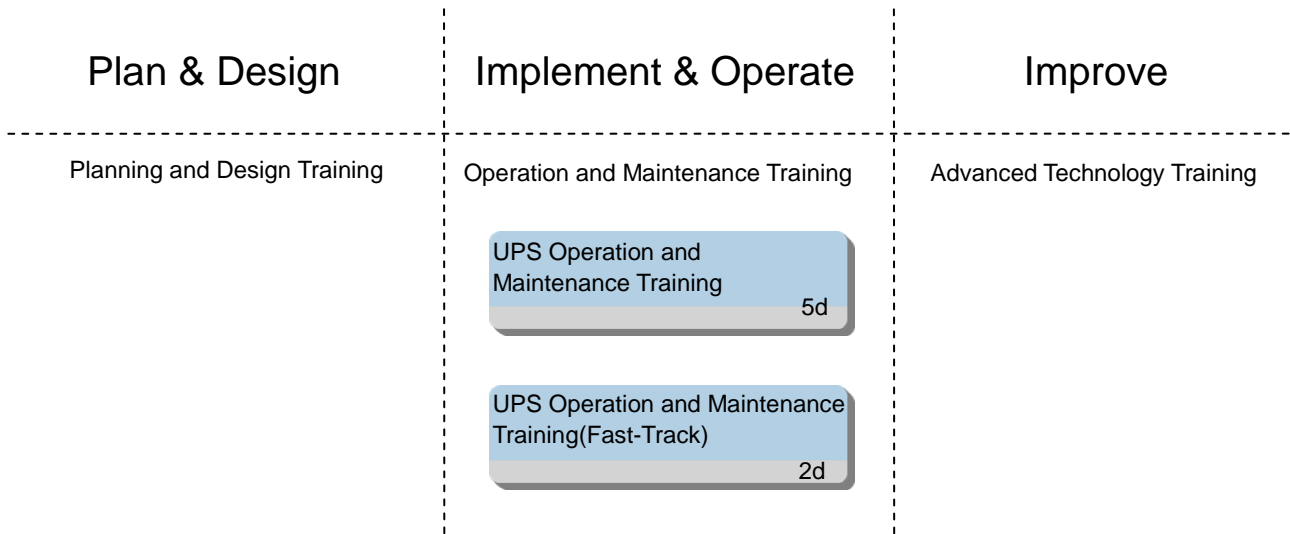
1.2 Data Center Facility Training Path



Elective Guide

- The training programs in the path include IDS1000, IDS2000, air condition and NetEco products trainings.
- Operators and Maintainers, Managers are proposed to learn the technology foundation, operation and maintenance training programs respectively.

1.3 UPS Training Path



Elective Guide

- The training programs in the path include UPS2000, UPS5000, UPS8000 products trainings.
- Operators and Maintainers, Managers are proposed to learn the technology foundation, operation and maintenance training programs respectively.

2 Training Programs

Enterprise Network Energy Training Programs are designed as follows:

Training Programs	Level	Duration (working days)	Training Location	Class Size
Power Supply Product Training Programs				
Minishelter Operation and Maintenance Training	II	1		6~12
Power3000 Operation and Maintenance Training	II	4		6~12
PowerCube500 Operation and Maintenance Training	II	1		6~12
PowerCube1000 Operation and Maintenance Training	II	4		6~12
Data Center Facility Product Training Programs				
IDS1000 Container Data Center Operation and Maintenance Training	II	2		6~12
IDS2000 Modular Data Center Operation and Maintenance Training	II	2		6~12
Precision Air Conditioner Operation and Maintenance Training	II	3		6~12
NetEco Management System Operation and Maintenance Training	II	2		6~12
UPS Product Training Programs				
UPS Operation and Maintenance Training	II	5		6~12
UPS Operation and Maintenance Training(Fast-Track)	II	2		6~12

Level Description: I : Basic Course II : Intermediate Course III: Advanced Course IV: Expert Course

2.1 Power Supply Training Programs

2.1.1 Minishelter Operation and Maintenance Training

Training Path

Minishelter Operation and Maintenance

OPS11

Lecture

1d

Target Audience

Operators and maintainers

Prerequisites

- Have a basic knowledge of Minishelter

Objectives

On completion of this program, the participants will be able to:

- Understand the basic structure of the Minishelter
- Master the principle, functional of Minishelter
- Master functions and parameters of the various components about Minishelter
- Master the installation of Minishelter
- Master the routine operation of Minishelter
- Master the routine maintenance of Minishelter
- Describe common faults of Minishelter
- Dispose common faults of Minishelter

Training Content

OPS11 Minishelter Operation and Maintenance

- Minishelter System introduction
 - Minishelter product overview
- Minishelter hardware installation and operation
 - Minishelter hardware installation and operation, norms and notes
- Minishelter working principle, structure, function
 - Minishelter working principle
 - Minishelter structure introduction
 - Minishelter various components features the value of the integrated data center
- Minishelter maintenance and fault diagnosis
 - How to obtain technical support help about Minishelter
 - Minishelter basic knowledge about routine maintenance
 - Minishelter basic knowledge about fault diagnosis
 - Minishelter operation guidance about parts replacement
 - Minishelter common fault diagnosis and treatment guidance

Duration

1 working day

Class Size

Min 6, max 12

2.1.2 Power3000 Operation and Maintenance Training

Training Path

Power3000 Operation and Maintenance

OPS12 Lecture, Hands-on exercise 4d

Target Audience

Operators and maintainers

Prerequisites

- Have a basic knowledge of power supply

Objectives

On completion of this program, the participants will be able to:

- Describe the function of Power3000 power supply system
- Describe the hardware structure of Power3000 power supply system
- Understand functions and parameters of the various components about Power3000 power supply system
- Understand the load capacity of Power3000 power supply system
- Master the installation of Power3000 power supply system, could complete some replace operation
- Master the routine operation of Power3000 power supply system
- Master the routine maintenance of Power3000 power supply system
- Describe common faults of Power3000 power supply system
- Dispose common faults of Power3000 power supply system

Training Content

OPS12 Power3000 Operation and Maintenance

- Power3000 power supply system introduction
 - Power3000 power supply system product overview
- Power3000 power supply system hardware installation and operation
 - Power3000 power supply system hardware installation and operation, norms and notes
- Power3000 power supply system site maintenance
 - Power3000 power supply system site maintenance operation
 - Power3000 power supply system parts replacement operation
- Power3000 power supply system maintenance and fault diagnosis
 - How to obtain technical support help about Power3000 power supply system
 - Power3000 power supply system basic knowledge about routine maintenance
 - Power3000 power supply system basic knowledge about fault diagnosis
 - Power3000 power supply system common fault diagnosis and treatment guidance

Duration

4 working days

Class Size

Min 6, max 12

2.1.3 PowerCube500 Operation and Maintenance Training

Training Path

PowerCube500 Operation and Maintenance

OPS13 Lecture, Hands-on exercise 1d

Target Audience

Operators and maintainers

Prerequisites

- Have a basic knowledge of power supply

Objectives

On completion of this program, the participants will be able to:

- Describe the function of PowerCube500 system
- Describe the hardware structure of PowerCube500 system
- Understand functions and parameters of the various components about PowerCube500 system
- Understand the load capacity of PowerCube500 system
- Master the installation of PowerCube500 system, could complete some replace operation
- Master the routine operation of PowerCube500 system
- Master the routine maintenance of PowerCube500 system
- Describe common faults of PowerCube500 system
- Dispose common faults of PowerCube500 system

Training Content

OPS13 PowerCube500 Operation and Maintenance

- PowerCube500 system introduction
 - PowerCube500 product overview
- PowerCube500 hardware installation and operation
 - PowerCube500 hardware engineering installation and operation, norms and notes
- PowerCube500 working principle, structure, function
 - PowerCube500 working principle
 - PowerCube500 structure introduction
 - PowerCube500 various components features the value of the integrated data center
- PowerCube500 maintenance and fault diagnosis
 - How to obtain technical support help about PowerCube500
 - PowerCube500 basic knowledge about routine maintenance
 - PowerCube500 basic knowledge about fault diagnosis
 - PowerCube500 operation guidance about parts replacement
 - PowerCube500 common fault diagnosis and treatment guidance

Duration

1 working day

Class Size

Min 6, max 12

2.1.4 PowerCube1000 Operation and Maintenance Training

Training Path

PowerCube1000 Operation and Maintenance

OPS14 Lecture, Hands-on exercise 4d

Target Audience

Operators and maintainers

Prerequisites

- Have a basic knowledge of power supply

Objectives

On completion of this program, the participants will be able to:

- Describe the function of PowerCube1000 system
- Describe the hardware structure of PowerCube1000 system
- Understand functions and parameters of the various components about PowerCube1000 system
- Understand the load capacity of PowerCube1000 system
- Master the installation of PowerCube1000 system, could complete some replace operation
- Master the routine operation of PowerCube1000 system
- Master the routine maintenance of PowerCube1000 system
- Describe common faults of PowerCube1000 system
- Dispose common faults of PowerCube1000 system

Training Content

OPS14 PowerCube Solution Introduction

- PowerCube1000 system introduction
 - PowerCube1000 system product overview
- PowerCube1000 system hardware installation and operation
 - PowerCube1000 system hardware engineering installation and operation, norms and notes
- PowerCube1000 system site maintenance
 - PowerCube1000 system site maintenance operation
 - PowerCube1000 system parts replacement operation
- PowerCube1000 system maintenance and fault diagnosis
 - How to obtain technical support help about PowerCube1000 system
 - PowerCube1000 system basic knowledge about routine maintenance
 - PowerCube1000 system basic knowledge about fault diagnosis
 - PowerCube1000 system common fault diagnosis and treatment guidance

Duration

4 working days

Class Size

Min 6, max 12

2.2 Data Center Facility Training Programs

2.2.1 IDS1000 Container Data Center Operation and Maintenance Training

Training Path

IDS1000 Container Data Center
Operation and Maintenance

OIDS11 Lecture, Hands-on exercise 2d

Target Audience

Operators and maintainers

Prerequisites

- None

Objectives

On completion of this program, the participants will be able to:

- Describe the basic architecture of the container DC
- Describe the basic concepts and features of the container DC
- Describe the typical configurations of the container DC
- Describe the values for consumer of the container DC
- Describe the technical advantages of the container DC
- Describe the application scenarios of the container DC
- Perform the engineering surveys of the container DC
- Describe the installation tools of the container DC
- Describe the installation precautions of the container DC
- Describe fastness and combination
- Describe the interconnect pipes of the container DC
- Describe the interconnect cables of the container DC
- Describe the System commission with power supply
- Describe the Inspections and checks of the container DC
- Describe the cooling system troubleshooting methods
- Describe the power supply system troubleshooting methods
- Describe the fire protection system troubleshooting methods
- Describe the room management system alarm processing methods

Training Content

OIDS11 IDS1000 Container Data Center Operation and Maintenance

- IDS1000 Container DC introduction
 - DC basic concept and feature
 - DC value
 - Huawei DC's core technology and advantage
 - DC application

- IDS1000 Container DC installation
 - Container DC survey
 - Container DC installation precautions
 - Container DC equipment installation tools
 - Container DC fastness and combination
 - Connecting pipe
 - Connecting cable
 - System commission with power supply
- IDS1000 Container DC routine maintenance
 - Refrigeration system troubleshooting
 - Power distribution system troubleshooting
 - Fire protection system troubleshooting
 - Computer room management system alarm processing

Duration

2 working days

Class Size

Min 6, max 12

2.2.2 IDS2000 Modular Data Center Operation and Maintenance Training

Training Path

IDS2000 Modular Data Center
Operation and Maintenance

OIDS14 Lecture, Hands-on exercise 2d

Target Audience

Operators and maintainers

Prerequisites

- None

Objectives

On completion of this program, the participants will be able to:

- Description modular DC basic components
- Description modular DC basic concept
- Description modular DC typical configuration
- Description modular DC value for consumer
- Description modular DC application scene
- Description modular DC installation tool
- Description modular DC installation notes
- Description modular DC combined cabinet
- Description modular DC fan installation
- Description modular DC UPS and UPS battery installation
- Description modular DC cable connection
- Description modular DC system power on debugging
- Description modular DC inspection
- Description modular DC UPS fault handle method
- Description modular DC fan fault handle method
- Description management system alarm handle method

Training Content

OIDS14 IDS2000 Modular DC Operation and Maintenance

- IDS2000 modular data center introduce
 - Modular DC basic concept and features
 - Modular DC basic components
 - Modular DC typical configuration
 - Modular DC value
 - Modular DC core technology and advantage
 - Modular DC application
 - Modular DC technical specification
- IDS2000 Modular DC installation

- Modular DC installation tool
- Modular DC installation notes
- Modular DC combined cabinet
- Modular DC fan installation
- Modular DC UPS and UPS battery installation
- Modular DC cable connection
- Modular DC power on and debugging
- IDS2000 Modular DC maintenance
 - Modular DC routine maintenance
 - Modular DC UPS fault handle
 - Modular DC fan fault handle
 - Modular DC management alarm handle

Duration

2 working days

Class Size

Min 6, max 12

2.2.3 Precision Air Conditioner Operation and Maintenance Training

Training Path

Precision Air Conditioner Operation and Maintenance Training

OIDS13 Lecture, Hands-on exercise 3d

Target Audience

Operators and maintainers

Prerequisites

- Have the basic technology of data center facility

Objectives

On completion of this program, the participants will be able to:

- Description precision air conditioner basic technology
- Description precision air conditioner cooling principle
- Description Huawei main precision air conditioner products
- Description precision air conditioner main technical parameters
- Description precision air conditioner installation and debugging
- Precision air conditioner different type, cooling type, feature, and application scene
- Precision air conditioner different air supply method, feature, and application scene
- Description precision air conditioner type selection and configuration method
- Precision air conditioner design and heat load calculation
- Description precision air conditioner installation and debugging
- Description precision air conditioner on-site fault handle
- Description precision air conditioner routine maintenance

Training Content

OIDS16 Precision Air Conditioner Operation and Maintenance

- Precision air conditioner basic technology
 - Temperature, humidity, pressure and measurement
 - Introduce cooling principle
 - Introduce main parts and main parts function
 - Introduce main parameters Introduce Huawei precision air conditioner products
- Precision air conditioner advanced technical training
 - Precision air conditioner different type, cooling type, feature, and application scene
 - Precision air conditioner different air supply method, feature, and application scene
 - Precision air conditioner configuration method
 - Precision air conditioner design and heat load calculation
 - Precision air conditioner type selection method
- Precision air conditioner installation and debugging
 - Precision air conditioner installation survey

- Precision air conditioner installation environment check
- Precision air conditioner indoor machine and outdoor machine installation
- Precision air conditioner pipe connection
- Precision air conditioner vacuum pumping and pressure test
- Precision air conditioner refrigerant charging
- Precision air conditioner power on and debugging

Duration

3 working days

Class Size

Min 6, max 12

2.2.4 NetEco Management System Operation and Maintenance Training

Training Path

NetEco Management System Operation and Maintenance Training

OIDS14 Lecture, Hands-on exercise 2d

Target Audience

Operators and maintainers

Prerequisites

- Have the basic technology of data center facility

Objectives

On completion of this program, the participants will be able to:

- Description of the NetEco networking mode
- Description of the NetEco function
- Description of the NetEco highlight
- Description of the NetEco data base installation
- Description of the NetEco software package installation
- Description of the NetEco configuration

Training Content

OIDS17 NetEco Management System Operation and Maintenance

- NetEco system introduction
 - NetEco management system function highlight
 - NetEco networking mode
 - NetEco function
 - NetEco highlight
 - NetEco application scene
- NetEco installation
 - NetEco data base installation
 - NetEco software package installation
 - NetEco hardware equipment installation
- NetEco configuration
 - Equipment access
 - Troubleshooting

Duration

2 working days

Class Size

Min 6, max 12

2.3 UPS Training Programs

2.3.1 UPS Operation and Maintenance Training

Training Path

UPS Operation and Maintenance

OUPS11 Lecture, Hands-on exercise 5d

Target Audience

Operators and maintainers

Prerequisites

- Have a basic knowledge of electrician

Objectives

On completion of this program, the participants will be able to:

- Master the application scenarios and basic working principle of UPS product
- Master the Structure and components function of UPS product and Storage battery
- Master the installation and debugging points, site work content, attention matters of UPS product and Storage battery
- Master the basic Fault determination method and thought of UPS product and Storage battery
- Master the trouble diagnosis and treatment methods of UPS product
- Master the log analysis capabilities of UPS
- Master the commonly testing tools usage of UPS
- Master the commonly faulty judgment and processing of storage battery

Training Content

OUPS11 UPS Operation and Maintenance

- UPS system introduction
 - Master the host of the panel in various states indicate characteristics
 - The Model identification and Features of Fuse / fuses, resistors, capacitors, diodes, transistors, MOSFET, IGBT, and so on
 - According to the LED, LCD display / voice to recognize (relays, transformers, buzzer, fan) / Charred flavor material appearance (batteries, transformers) / Machine and component temperature to identify potential problems
 - Detection based on the phenomenon of online, offline, all the major components. Focus to master online detection method, to understand the general laws of the fault detection
- UPS parts replacement
 - Manual maintenance bypass the conversion, and the machine exit
 - The dismantling of Amplifier board
 - Electrolytic capacitor discharge, DC FUSE dismantling
 - IGBT module dismantling
 - Fan dismantling

- Commonly circuit board dismantling
- UPS testing tools usage
 - The proper use of a multi-meter
 - To measure host AC and DC output voltage zero ground voltage, zero fire voltage
 - Focus on mastering the IGBT and power MOSFET and fuse / fuse detection
 - The Mains state inverter
 - Insertion of a battery switch
 - Parameter measurements confirm to appropriate adjustment (output / charge voltage)
 - Manual maintenance bypass Turn to the automatic bypass, debugging parallel machine systems
- UPS faulty judgment and processing of storage battery
 - The Current Situation of storage battery industry
 - To introduce common storage battery types and characteristics
 - The working principle and application scenarios of various storage battery types
 - The common failure case studies of storage battery

Duration

5 working days

Class Size

Min 6, max 12

2.3.2 UPS Operation and Maintenance Training(Fast-Track)

Training Path

UPS Operation and Maintenance(Fast-Track)

OUPS12 Lecture, Hands-on exercise 2d

Target Audience

Operators and maintainers

Prerequisites

- Have a basic knowledge of electrician

Objectives

On completion of this program, the participants will be able to:

- Master the application scenarios and basic working principle of UPS product
- Master the Structure and components function of UPS product and Storage battery
- Master the installation and debugging points, site work content, attention matters of UPS product and Storage battery
- Master the basic Fault determination method and thought of UPS product and Storage battery

Training Content

OUPS12 UPS Operation and Maintenance(Fast-Track)

- UPS product introduction
 - Basic knowledge of power supply and distribution
 - Safety Basic knowledge
 - UPS Product appearance and functionality introduction
 - UPS Typical application scenarios
 - Introduce the host within the plate member and the name of the device, functions of UPS
 - UPS Common operating mode and various mode working principle
 - Storage battery product and application scenarios introduction
- UPS installation and operations
 - The installation and debugging points of UPS and Storage battery
 - The Installation and maintenance process of UPS parallel operation
 - Routine maintenance operations

Duration

2 working days

Class Size

Min 6, max 12