

Training Proposal for Network Energy Product Technology Training Project



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1 Training Solution

1.1 Required Training Programs

Network Energy Product Technology Training For this project, the whole training solution is designed into the following programs. List of Training Program(s) for Network Energy Product Technology Training Project:

Training Program	Program Level	Duration (workdays)	Training Location	Class Size
Telecom Energy				
Minishelter(ITS1000M) System Operation and Maintenance Training	II	2		6 ~ 12
Power 3000 (DC Power) System Operation and Maintenance Training	II	4		6 ~ 12
Power 3000 (DC Power) System Design Training	III	2		6 ~ 12
PowerCube 1000 System Operation and Maintenance Training	II	4		6 ~ 12
PowerCube1000 System Design Training	III	2		6 ~ 12
Data Center Energy				
UPS2000 Operation and Maintenance Training	II	2		6 ~ 12
UPS5000 Operation and Maintenance Training	II	3		6 ~ 12
UPS8000 Operation and Maintenance Training	II	4		6 ~ 12
IDS1000 System Operation and Maintenance Training	II	5		6 ~ 12
IDS2000 System Operation and Maintenance Training	II	5		6 ~ 12
NetEco System Operation and Maintenance Training	II	1		6 ~ 12
NetCol5000 System Operation and Maintenance Training	II	2		6 ~ 12
NetCol8000 System Operation and Maintenance Training	II	2		6 ~ 12

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

1.2 Telecom Energy

1.2.1 Minishelter(ITS1000M) System Operation and Maintenance Training

Training Path

Minishelter(ITS1000M) System Operation and Maintenance Training		
OPA02	Lecture + Practical	2d

Target Audience

The program is intended for field maintenance engineers, second line or technical support engineers of Minishelter (ITS1000M) System Operation and Maintenance

Prerequisites

- Having working experience in engineering project or maintenance of Minishelter (ITS1000M) or be familiar with Minishelter(ITS1000M) group

Objectives

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

- Outline green site solution of Minishelter(ITS1000M) system.
- Interpret the working principle of Minishelter(ITS1000M) system.
- Interpret the basic structure of Minishelter(ITS1000M) system.
- Outline the typical configurations of Minishelter(ITS1000M)
- Interpret the functions and specifications of different parts.
- Perform hardware configuration and cables connection.
- Perform the installation of Minishelter(ITS1000M) system.
- Perform the operation of Minishelter(ITS1000M) system.
- Perform the maintenance of Minishelter(ITS1000M) system.
- Explain the common fault types.
- Apply fault disposal method
- Explain how to prevent the fault
- Locate and eliminate faults, get experience from troubleshooting practice

Training Content

OPA02 Minishelter(ITS1000M) System Operation and Maintenance Training

- Minishelter (ITS1000M) Solution Description
 - Challenges of traditional shelter
 - Mini-shelter leads a new era of green sites
 - Telecom grade design, create reliable site
 - Mini-shelter reduces TCO
- Minishelter (ITS1000M) System Operation and Maintenance
 - Overview of Minishelter(ITS1000M).

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- Hardware Architecture of Minishelter(ITS1000M).
 - Hardware Configuration of Minishelter(ITS1000M).
 - Application Scenarios of Minishelter(ITS1000M).
 - Introduction to Installation of Minishelter(ITS1000M).
 - Routine Maintenance
 - Troubleshooting
 - Minishelter (ITS1000M) User Guide
 - Minishelter (ITS1000M) User Guide

Duration

2 working days

Class Size

Min 6, Max 12

1.2.2 Power 3000 (DC Power) System Operation and Maintenance Training

Training Path

Power 3000 (DC Power) System Operation and Maintenance Training		
OPB12	Lecture + Practical	4d

Target Audience

The program is intended for second line or technical support engineers of Power 3000 (DC Power) Operation and Maintenance

Prerequisites

- Having working experience in the maintenance of Power System more than one year and Be familiar with Battery group

Objectives

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

- Describe the working principle of power system
- Describe structure, functions of power system
- Outline the features of power system.
- Outline composing of power system
- Interpret the functions and specifications of different composing.
- Outline the load capacity and ability of power system.
- Perform DC power system operation and maintenance, etc.
- Perform the on-site operation, such as AC detective-Board replacement, etc.
- Locate and eliminate faults, get experience from troubleshooting practice

Training Content

OPB12 Power 3000 (DC Power) System Operation and Maintenance Training

- Basic Explainledge of power distribution
 - Application scenario of power distribution
 - Power distribution used in different power solution
 - Basic conception of power distribution
 - Low-voltage electrical devices
 - Power distribution product introduction
- Power3000 operation and maintenance
 - Routine maintenance of power3000
 - Troubleshooting procedure of power3000
 - Type troubleshooting of power3000
 - How to troubleshooting the common faults
 - How to replacing main components
- Power3000 (DC Power) User Guide

■ Power3000 (DC Power) User Guide

Duration

4 working days

Class Size

Min 6, Max 12

1.2.3 Power 3000 (DC Power) System Design Training

Training Path

Power 3000 (DC Power) System Design Training		
OPB18	Lecture	2d

Target Audience

The program is intended for layout and design engineer of Power 3000 (DC Power) solution, or senior engineer of operation and maintenance

Prerequisites

- Having working experience in technical support of Power 3000 (DC Power) more than three years and Having more than three years working experience in battery and power distribution

Objectives

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

- Explain the design principle of Power 3000 (DC Power) solution.
- Outline the design step of Power 3000 (DC Power) solution.
- Perform power consumption calculation
- Perform battery configuration design of Power 3000 (DC Power) solution.
- Perform the design process, design methods of Power 3000 (DC Power) solution

Training Content

OPB18 Power 3000 (DC Power) System Design Training

- Power 3000 (DC Power) System Design
 - Overview of DC Power Design Method
 - Design procedure of DC Power system
 - Calculate power consumption
 - Configure battery capacity and string
 - Configure PSU
 - Configure circuit breaker
 - Configure power cable and grounding cable
 - Configure diesel generator

Duration

2 working days

Class Size

Min 6, Max 12

1.2.4 PowerCube 1000 System Operation and Maintenance Training

Training Path

PowerCube 1000 System Operation and Maintenance Training		
OPC52	Lecture + Practical	4d

Target Audience

The program is intended for second line or technical support engineers of PowerCube 1000 Operation and Maintenance

Prerequisites

- Having working experience in the operation and maintenance of D.G more than one year
- and Be familiar with Battery group

Objectives

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

- Outline different type scenario of PowerCube 1000 Solution.
- Outline the load capacity and ability of PowerCube 1000 Solution.
- Interpret the working principle of PowerCube 1000 Solution.
- Interpret the basic structure of PowerCube 1000 Solution.
- Outline the typical configurations of PowerCube 1000 Solution.
- Interpret the functions and specifications of different parts.
- Perform hardware configuration and cables connection.
- Perform the installation of PowerCube 1000 Solution.
- Perform the operation of PowerCube 1000 Solution.
- Perform the maintenance of PowerCube 1000 Solution.
- Explain the common fault types.
- Apply fault disposal method
- Explain how to prevent the fault
- Perform the Field operation, such as Battery replacement.
- Locate and eliminate faults, get experience from troubleshooting practice

Training Content

OPC52 PowerCube 1000 System Operation and Maintenance Training

- PowerCube 1000 Solution Description
 - Solution background
 - System introduction
 - Highlights and benefits
- PowerCube 1000 Operation and maintenance
 - PowerCube 1000 System introduction
 - Component of PowerCube 1000 introduction

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- Installation Devices
 - Installation Cables
 - Power on and Commissioning
 - Routine maintenance
 - General Procedures of maintenance
 - General Procedures of Troubleshooting
 - Methods of Fault Judgment and Location
 - Troubleshooting
 - PowerCube 1000 User Guide
 - PowerCube 1000 User Guide

Duration

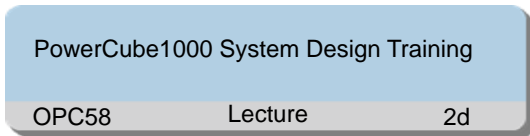
4 working days

Class Size

Min 6, Max 12

1.2.5 PowerCube1000 System Design Training

Training Path



Target Audience

The program is intended for layout and design engineer of PowerCube1000 solution

Prerequisites

- Having more than three years working experience in technical support of hybrid power solution
- Having more than three years working experience in battery and power system design

Objectives

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

- Explain the design principle of PowerCube1000 solution.
- Outline the design step of PowerCube1000 solution.
- Perform solar module and battery configuration design of PowerCube1000 solution.
- Perform D.G. configuration design
- Perform power system configuration design
- Perform the design process, design methods of PowerCube1000 solution.

Training Content

OPC58 PowerCube1000 System Design Training

- PowerCube1000 System Design
 - Overview of PowerCube1000 Design Method
 - Design progress of PowerCube1000
 - PV Panels Configuration Design
 - D.G Configuration Design
 - Battery Configuration Design
 - Power System Configuration Design

Duration

2 working days

Class Size

Min 6, Max 12

1.3 Data Center Energy

1.3.1 UPS2000 Operation and Maintenance Training

Training Path

UPS2000 Operation and Maintenance Training		
OPD12	Lecture + Practical	2d

Target Audience

The program is intended for second line or technical support engineers of UPS Operation and Maintenance

Prerequisites

- Having working experience in the maintenance of UPS more than one year and Be familiar with Battery group

Objectives

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

- Describe the working principle and main components of UPS
- Express the function and features of main components of UPS2000
- Describe the load capacity of UPS2000
- Perform installation and maintenance of UPS2000
- Locate and eliminate faults, get experience from troubleshooting practice

Training Content

OPD12 UPS2000 Operation and Maintenance Training

- UPS2000 System Description
 - UPS working principle
 - UPS2000 components introduction
 - UPS2000 classification and features
 - UPS2000 technology features
 - UPS2000 application scenario
- UPS2000 System Operation and maintenance
 - UPS2000 routine maintenance
 - UPS2000 typical faults
 - UPS2000 modules replacement
 - UPS2000 procedure of troubleshooting
 - Judgment and Location troubleshooting of UPS2000
- UPS2000 User Guide
 - UPS2000 User Guide

Duration

2 working days

Class Size

Min 6, Max 12

1.3.2 UPS5000 Operation and Maintenance Training

Training Path

UPS5000 Operation and Maintenance Training		
OPD22	Lecture + Practical	3d

Target Audience

The program is intended for second line or technical support engineers of UPS Operation and Maintenance

Prerequisites

- Having working experience in the maintenance of UPS more than two years and Be familiar with Battery group

Objectives

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

- Describe the working principle and main components of UPS
- Express the function and features of main components of UPS5000
- Express the typical configuration of UPS5000
- Express the classification and model of UPS5000
- Describe the load capacity of UPS5000
- Perform installation and maintenance of UPS5000
- Locate and eliminate faults, get experience from troubleshooting practice

Training Content

OPD22 UPS5000 Operation and Maintenance Training

- UPS5000 System Description
 - UPS working principle
 - UPS5000 components introduction
 - UPS5000 classification and features
 - UPS5000 technology features
 - UPS5000 application scenario
- UPS5000 System Operation and maintenance
 - UPS5000 routine maintenance
 - UPS5000 typical faults
 - UPS5000 modules replacement
 - UPS5000 procedure of troubleshooting
 - Judgment and Location troubleshooting of UPS5000
- UPS5000 User Guide
 - UPS5000 User Guide

Duration

3 working days

Class Size

Min 6, Max 12

1.3.3 UPS8000 Operation and Maintenance Training

Training Path

UPS8000 Operation and Maintenance Training		
OPD32	Lecture + Practical	4d

Target Audience

The program is intended for second line or technical support engineers of UPS Operation and Maintenance

Prerequisites

- Having working experience in the maintenance of UPS more than three years and Be familiar with Battery group

Objectives

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

- Describe the working principle and main components of UPS
- Express the function and features of main components of UPS8000
- Express the method of combine UPS8000
- Express the typical configuration of UPS8000
- Express the classification and model of UPS8000
- Describe the load capacity of UPS8000
- Perform installation and maintenance of UPS8000
- Locate and eliminate faults, get experience from troubleshooting practice

Training Content

OPD32 UPS8000 Operation and Maintenance Training

- UPS8000 System Description
 - UPS working principle
 - UPS8000 components introduction
 - UPS8000 classification and features
 - UPS8000 technology features
 - UPS8000 application scenario
- UPS8000 System Operation and maintenance
 - UPS8000 routine maintenance
 - UPS8000 typical faults
 - UPS8000 modules replacement
 - UPS8000 procedure of troubleshooting
 - Judgment and Location troubleshooting of UPS8000
- UPS8000 User Guide
 - UPS8000 User Guide

Duration

4 working days

Class Size

Min 6, Max 12

1.3.4 IDS1000 System Operation and Maintenance Training

Training Path

IDS1000 System Operation and Maintenance Training		
OPE12	Lecture + Practical	5d

Target Audience

The program is intended for second line or technical support engineers of IDS1000 System Operation and Maintenance

Prerequisites

- Having working experience in the maintenance of IDS1000 and Power System

Objectives

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

- Describe the basic structure of IDS1000 system.
- Describe the operation of IDS1000 system.
- Describe the working principle, structure, functions and features of IDS1000 system.
- Explain the functions and specifications of different parts.
- Locate and eliminate faults, get experience from troubleshooting

Training Content

OPE12 IDS1000 System Operation and Maintenance Training

- IDS1000 Solution Description
 - Challenge of traditional data center
 - Benefit of IDS1000
 - IDS1000 subsystem
 - IDS1000 system introduction
 - Function and Features
 - Application Scenario
 - Successful Cases
- IDS1000 System Operation and maintenance
 - Maintenance procedure and caution of IDS1000
 - IDS1000 routine maintenance
 - Judgment and Location troubleshooting of ventilation system of IDS1000
 - Subsystem troubleshooting
- IDS1000 User Guide
 - IDS1000 User Guide

Duration

5 working days

Class Size

Min 6, Max 12

1.3.5 IDS2000 System Operation and Maintenance Training

Training Path

IDS2000 System Operation and Maintenance Training		
OPE22	Lecture + Practical	5d

Target Audience

The program is intended for second line or technical support engineers of IDS2000 System Operation and Maintenance

Prerequisites

- Having working experience in the maintenance of Data Center

Objectives

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

- Outline the subsystem of IDS2000
- Outline the main components of IDS2000
- Outline the function and features of cooling system and power system
- Perform operation and maintenance of UPS and DC power system
- Perform operation and maintenance of air conditioner and PDF
- Locate and eliminate faults, get experience from troubleshooting

Training Content

OPE22 IDS2000 System Operation and Maintenance Training

- IDS2000 Solution Description
 - Challenge of traditional data center
 - Benefit of IDS2000
 - Modularize data center
 - Function and Features of modularize data center
 - Function and Features of modularize data center
 - Application Scenario
 - Successful Cases
- IDS2000 System Operation and maintenance
 - Maintenance procedure and caution of IDS1000
 - IDS1000 routine maintenance
 - Cooling system and power system troubleshooting
 - Judgment and Location troubleshooting of subsystem
- IDS2000 User Guide
 - IDS2000 User Guide

Duration

5 working days

Class Size

Min 6, Max 12

1.3.6 NetEco System Operation and Maintenance Training

Training Path

NetEco System Operation and Maintenance Training		
OPF02	Lecture + Practical	1d

Target Audience

The program is intended for staffs that are responsible for network element monitoring and operation through iManager NetEco. Typical target group would be NMS operator

Prerequisites

- Having basic Describeing of data communication
- Having general Explainedge of telecom networks
- Accomplish the corresponding product training, which is managed by iManager NetEco

Objectives

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

- Express the working principle of monitoring equipments, such as DG control unit, Water Level Sensor, door sensor...
- Describe the classification, specification and features of monitoring equipments
- Become familiar with the basic concepts, structures and operations about system.
- Describe system structure, orientation features, network application and functions of the iManager NetEco.
- Describe the features of topology management, security management, configuration management, alarm management and performance management of iManager NetEco.
- Perform network performance monitoring, network alarms monitoring, environment and power supply monitoring and network element data backup and upgrading

Training Content

OPF02 NetEco System Operation and Maintenance Training

- NetEco Product Introduction
 - Network management architecture
 - Hardware and software architecture of iManager NetEco
 - Features of iManager NetEco
 - Describe the interfaces Provided by NetEco
 - Successful cases
- NetEco Operation and maintenance
 - Login to the Server via Client
 - Add a map and device
 - Deal with the alarm
 - Backup and auto save the configuration

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- Add a management user
 - The function, structure and protocol stack of SNMP protocol.
 - The basic concepts, working theories, structures and operations about operation system.
 - The features of topology management, security management, configuration management, alarm management and performance management of iManager NetEco.
 - The operation for service provisioning and maintenance, element management, alarm management and performance statistics

Duration

1 working day

Class Size

Min 6, Max 12

1.3.7 NetCol5000 System Operation and Maintenance Training

Training Path

NetCol5000 System Operation and Maintenance Training		
OPG22	Lecture + Practical	2d

Target Audience

The program is intended for second line or technical support engineers of NetCol5000 System Operation and Maintenance.

Prerequisites

- Describe elementary electrical circuit and refrigeration theory
- Graduator of junior college or higher
- More than one year of previous experience of similar position

Objectives

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

- Describe refrigeration theory
- Describe principle of compressor, condenser, evaporator, humidifiers, re-heater, and kinds of sensors
- Design solution of air-conditioner
- Apply solution of air-conditioner
- Install Huawei air-conditioner
- Operate air-conditioner
- Fill in new air-conditioner starting and testing records
- Use the special tools and meters
- Do daily maintenance
- Troubleshoot air-conditioner
- Fill in maintenance and testing records

Training Content

OPG22 NetCol5000 System Operation and Maintenance Training

- IDS2000 Solution Description
 - Challenge of traditional data center
 - Benefit of IDS2000
 - Modularize data center
 - Function and Features of modularize data center
 - Function and Features of modularize data center
 - Application Scenario
 - Successful Cases
- IDS2000System Operation and maintenance

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- Maintenance procedure and caution of IDS1000
 - IDS1000 routine maintenance
 - Cooling system and power system troubleshooting
 - Judgment and Location troubleshooting of subsystem
 - IDS2000 User Guide
 - IDS2000 User Guide

Duration

2 working days

Class Size

Min 6, Max 12

1.3.8 NetCol8000 System Operation and Maintenance Training

Training Path

NetCol8000 System Operation and Maintenance Training		
OPH02	Lecture + Practical	2d

Target Audience

The program is intended for second line or technical support engineers of NetCol8000 System Operation and Maintenance.

Prerequisites

- Having basic Explainedge about ventilation and A/C system.

Objectives

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

- Describe the air conditioner working principle, especially for the refrigeration theory
- Describe the working principle of compressor, condenser, evaporator, humidifiers, re-heater, and kinds of sensors
- Describe the NetCol8000 solution of air-conditioner
- Apply NetCol8000 solution of air-conditioner
- Explain the application scenario of NetCol8000 system
- Operate the naming rule of NetCol8000 system
- Describe the basic structure and typical layout of NetCol8000 system.
- Operate the components specification and features
- Operate the function of compressor, condenser, evaporator and so on
- Perform the partially filling in refrigerant
- Perform commissioning
- Perform checking after commissioning
- Perform the air filter, indoor fan, compressor, condenser, evaporator, Infrared Humidifier, electric heater, air suction and exhaust pressure, sight glass, electrical control system, routine maintenance
- Perform common fault troubleshooting
- Perform fault diagnosis and troubleshooting

Training Content

OPH02 NetCol8000 System Operation and Maintenance Training

- NetEco Product Introduction
 - Network management architecture
 - Hardware and software architecture of iManager NetEco
 - Features of iManager NetEco
 - Describe the interfaces Provided by NetEco

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- Successful cases
 - NetEco Operation and maintenance
 - Login to the Server via Client
 - Add a map and device
 - Deal with the alarm
 - Backup and auto save the configuration
 - Add a management user
 - The function, structure and protocol stack of SNMP protocol.
 - The basic concepts, working theories, structures and operations about operation system.
 - The features of topology management, security management, configuration management, alarm management and performance management of iManager NetEco.
 - The operation for service provisioning and maintenance, element management, alarm management and performance statistics

Duration

2 working days

Class Size

Min 6, Max 12

