

PART 1 - GENERAL

- 1.1 TRAINEES .1 Trainees: personnel selected for operating and maintaining this facility. Includes Facility Manager, building operators, maintenance staff, security staff, and technical specialists as required.
- .2 Trainees will be available for training during later stages of construction for purposes of familiarization with systems.
- 1.2 INSTRUCTORS .1 Departmental Representative will provide:
- .1 Descriptions of systems.
- .2 Instruction on design philosophy, design criteria, and design intent.
- .2 Contractor and certified factory-trained manufacturers' personnel: to provide instruction on the following:
- .1 Start-Up, operation, shut-down of equipment, components and systems.
- .2 Control features, reasons for, results of, implications on associated systems of, adjustment of set points of control and safety devices.
- .3 Instructions on servicing, maintenance and adjustment of systems, equipment and components.
- .3 Contractor and equipment manufacturer to provide instruction on:
- .1 Start-up, operation, maintenance and shut-down of equipment they have certified installation, started up and carried out PV tests.
- 1.3 TRAINING OBJECTIVES .1 Training to be detailed and duration to ensure:
- .1 Safe, reliable, cost-effective, energy-efficient operation of systems in normal and emergency modes under all conditions.
-

- 1.3 TRAINING OBJECTIVES  
(Cont'd)
- .1 (Cont'd)
  - .2 Effective on-going inspection, measurements of system performance.
  - .3 Proper preventive maintenance, diagnosis and trouble-shooting.
  - .4 Ability to update documentation.
  - .5 Ability to operate equipment and systems under emergency conditions until appropriate qualified assistance arrives.
- 1.4 TRAINING MATERIALS
- .1 Instructors to be responsible for content and quality.
  - .2 Training materials to include:
    - .1 "As-Built" Contract Documents.
    - .2 Operating Manual.
    - .3 Management Manual.
    - .4 TAB and PV Reports.
  - .3 Departmental Representative, Commissioning Agent and Facility Manager will review training manuals.
  - .4 Training materials to be in a format that permits future training procedures to same degree of detail.
  - .5 Supplement training materials:
    - .1 Transparencies for overhead projectors.
    - .2 Multimedia presentations.
    - .3 Manufacturer's training videos.
    - .4 Equipment models.
- 1.5 SCHEDULING
- .1 Include in Commissioning Schedule time for training.
  - .2 Deliver training during regular working hours, training sessions to be approximately 3 hours in length, or longer if required to adequately train individuals.
  - .3 Training to be completed prior to acceptance of facility.
- 1.6
- .1 Be responsible for:
-

RESPONSIBILITIES

- .1 Implementation of training activities,
- .2 Coordination among instructors,
- .3 Quality of training, training materials,
- .4 Departmental Representative will evaluate training and materials.
- .5 Upon completion of training, provide written report, signed by Instructors, witnessed by Departmental Representative.

1.7 TRAINING  
CONTENT

- .1 Training to include demonstrations by Instructors using the installed equipment and systems.
- .2 Content includes:
  - .1 Review of facility and occupancy profile.
  - .2 Functional requirements.
  - .3 System philosophy, limitations of systems and emergency procedures.
  - .4 Review of system layout, equipment, components and controls.
  - .5 Equipment and system start-up, operation, monitoring, servicing, maintenance and shut-down procedures.
  - .6 System operating sequences, including step-by-step directions for starting up, shut-down, operation of valves, dampers, switches, adjustment of control settings and emergency procedures.
  - .7 Maintenance and servicing.
  - .8 Trouble-shooting diagnosis.
  - .9 Inter-Action among systems during integrated operation.
  - .10 Review of O&M documentation.
- .3 Provide specialized training as specified in relevant Technical Sections of the construction specifications.

1.8 VIDEO-BASED  
TRAINING

- .1 Manufacturer's videotapes to be used as training tool with Departmental Representative's review and written approval 3 months prior to commencement of scheduled training.
-

- 1.8 VIDEO-BASED TRAINING (Cont'd)
- .2 On-Site training videos:
    - .1 Videotape training sessions for use during future training.
    - .2 To be performed after systems are fully commissioned.
    - .3 Organize into several short modules to permit incorporation of changes.
  - .3 Production methods to be professional quality.
- 1.9 SUBMITTALS
- .1 Provide copies of all proof of training.
  - .2 Indicate names of those trained, what the training entailed, the number, location and length of training sessions.
  - .3 Provide copies of training manuals, electronic presentations, videos.

PART 2 - PRODUCTS

- 2.1 NOT USED
- .1 Not Used.

PART 3 - EXECUTION

- 3.1 NOT USED
- .1 Not Used.