

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 All relevant sections of the controls Divisions.
- .2 All relevant sections of the mechanical Divisions
- .3 All relevant sections of the electrical Divisions

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Demonstrate scheduled operation and maintenance of equipment and systems to Departmental Representative's personnel two weeks prior to date of final inspection.
- .2 Departmental Representative: provide list of personnel to receive instructions, and co-ordinate their attendance at agreed-upon times.
- .3 Preparation:
 - .1 Verify conditions for demonstration and instructions comply with requirements.
 - .2 Verify designated personnel are present.
 - .3 Ensure equipment has been inspected and put into operation in accordance with Section 01 91 31.
 - .4 Ensure testing, adjusting, and balancing has been performed [in accordance with Section 01 91 13 - General Commissioning (Cx) Requirements and equipment and systems are fully operational.
- .4 Demonstration and Instructions:
 - .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment, material and system at agreed upon times, at the designated location.
 - .2 Instruct personnel in phases of operation and maintenance of equipment, material and system using operation and maintenance manuals as basis of instruction.
 - .3 Review contents of manual in detail to explain aspects of operation and maintenance.
 - .4 Prepare and insert additional data in operations and maintenance manuals when needed during instructions.
- .5 Time Allocated for Instructions: ensure amount of time required for instruction of each item of equipment or system as follows:
 - .1 Section 21 05 01 - Mechanical – Common Work Results for Mechanical: 1 x 4 hours.
 - .2 Section 21 13 13 Wet Pipe Sprinkler Systems: 2 hours.
 - .3 Section 21 13 16 Dry Pipe Sprinkler Systems: 2 hours.
 - .4 Section 21 30 00 Fire Pumps: 4 hours.

- .5 Section 22 05 00 -Common work Results for Plumbing: 2 x 4 hours.
- .6 Section 22 10 10 -Plumbing Pumps: 2 hours.
- .7 Division 23 - HVAC: 3 x 4 hours.
- .8 Section 25 01 12 EMCS: Training: 3 x 8 hours.
- .9 Section: 26 05 00 - Common Work Results for Electrical: 2 x 4hours.
- .10 Section 26 32 13.01 - Power Generation Diesel: 8 hours.
- .11 Section 26 09 43 – Network Lighting Controls: 4 hours.
- .12 Section 26 36 23 – Automatic Transfer Switches: 4 hours.
- .13 Section 28 31 00.01 – Multiplex Fire Alarm System: 8 hours.
- .14 For all section not mentioned above, requires training: 4 hours.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Departmental Representative's approval.
- .3 Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
- .4 Coordinate with Departmental Representative time and date of each demonstration, with list of persons present.
- .5 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions of equipments, materials and systems as well as the related training sessions.

1.4 QUALITY ASSURANCE

- .1 When specified in individual Sections requiring manufacturer to provide authorized representative to demonstrate operation of equipment and systems:
 - .1 Instruct Owner's personnel.
 - .2 Provide written report that demonstration and instructions have been completed.

Part 2

ANNEXE 1 – REGISTRE DE FORMATION

MECHANICAL AND ELECTRICAL INSTALLATIONS The present training plan is part of Section 01 79 00 (annexe « 1 »)				
Objectives	Training agent	Content (30 % theory; 70 % application)	Duration	Tools and training material
Sprinkler Systems: 1. Acquire a detailed knowledge about the new building installations and changes made to the existing systems/equipments. 2. Improve the operation knowledge of each technical installation including eyeswash station. 3. Familiarize with start-up, operation, shut-down procedure, emergency stops limitation and optimum operation techniques. 4. Prevent breakdown and service call reduction. 5. Safe equipment usage.	Designer Contractor	Recurrent tests or analyses 2. Annual Maintenance program. 3. Verification of O & M manuals. 4. Troubleshooting – Equipments et technical installations. 5. Site visit with a Q&A session in a class format.	21 13 13 1x2 hours 21 13 16 1x2 hours 21 30 00 1x 4 hours	Demonstrations. 2. As built Plans. 3. Basis of design. 4. Building management manual. 5. TAB Reports and Performance Verification reports.

HVAC Installations and Plumbing: 1. Acquire a detailed knowledge about the new building installations and changes made to the existing systems/equipments. 2. Improve the operation knowledge of each technical installation including eyeswash station. 3. Familiarize with start-up, operation, shut-down procedure, emergency stops limitation and optimum operation techniques. 4. Prevent breakdown and service call reduction. 5. Safe equipment usage.	Designer Contractor	1. Recurrent tests or analyses 2. Annual Maintenance program. 3. Verification of O & M manuals. 4. Troubleshooting – Equipments et technical installations. 5. Site visit with a Q&A session in a class format.	Common: Mechanical 1X4 hours 22 Plumbing 2X4 hours 22 Plumbing equipment 1X2 hours 23 HVAC : 3 sessions of 4 hours each	1. Demonstrations. 2. As built Plans. 3. Basis of design. 4. Building management manual. 5. TAB Reports and Performance Verification reports.
Controls and automation Refer to section 25 01 12 – EMCS Training	Designer Contractor	1. Recurrent tests or analyses 2. Annual Maintenance program. 3. Verification of O & M manuals. 4. Troubleshooting – Equipments et technical installations. 5. Site visit with a Q&A session in a class format. 6. Advanced programming notions (after acceptance).	3 sessions of 8 hours each	1. Demonstrations. 2. As built Plans. 3. Basis of design. 4. Building management manual. 5. TAB Reports and Performance Verification reports.

Electrical Installations : Refer to section 26 05 00 - Common Work Results for Electrical 26 32 13.01 Power Generation Diesel 26 09 43 Network Lighting Controls 26 36 23 Automatic Transfer Switches 28 31 00.01 Multiplex Fire Alarm System	Designer Contractor	1.	Recurrent tests or analyses	26 05 00	1.	Demonstrations.
		2.	Annual Maintenance program.	2X4 hours	2.	As built Plans.
		3.	Verification of O & M manuals.		3.	Basis of design.
		4.	Troubleshooting – Equipments et technical installations.	26 32 13.01 1x 8 hours	4.	Building management manual.
		5.	Site visit with a Q&A session in a class format.	26 09 43 1x 4 hours	5.	TAB Reports and Performance Verification reports.
				26 36 23 1x 4 hours		
				28 31 00.01 1x 8 hours		

END OF SECTION