

	Title: YALE OFFICE OF FACILITIES PROCEDURE MANUAL Chapter: 01 – Construction Waste Management Division: 01 79 00 Demonstration and Training	Section: 01 79 00 Requirements for Division 1
		Date: September 2025
		Author: Program Support & Technical Services

SECTION 01 79 00 – DEMONSTRATION AND TRAINING

[AUGUST 2025]

[Note: the “Architect” is REQUIRED TO review and incorporate to the maximum extent possible the requirements in this section. any deviations from owner’s division 1 requirements should be identified AND NOTED to yale, as required by the signed A-10, “professional services agreement between owner and architect”, at exhibit a, “project conditions”, paragraph 2.2.4.6(b). The architect is further required to validate any code, standard OR REFERENCE herein and to update to THE LATEST issuance of such. any portions of this section included within brackets “[]” SHOULD be reviewed for verification of choices contained therein. further, in the preparation and editing of this section, the architect is required TO COORDINATE and cross reference the architect’s project specific design deliverables, including but not limited to: drawings, specifications, calculations and basis of design.]

PART 1 - GENERAL

1.1 SUMMARY

- A. The section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Instruction in operation and maintenance of systems, subsystems, and equipment.
 - 2. Demonstration and training video recordings.
- B. Allowances: Furnish demonstration and training instruction time under the demonstration and training allowance as specified in Section 012100 "Allowances."
- C. Unit Price for Instruction Time: Length of instruction time will be measured by actual time spent performing demonstration and training in required location. No payment will be made for time spent assembling educational materials, setting up, or cleaning up. See requirements in [Section 012200 "Unit Prices."]

1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objectives and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional modules.
- B. Qualification Data: For instructor.
- C. Attendance Record: For each training module, submit a list of participants with participant signatures and length of instruction time.
- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based tests.

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1.3 CLOSEOUT SUBMITTALS

- A. At completion of training, submit complete Training Manuals prepared in same format as specific in [Section 017823 "Operation and Maintenance Data."]
- B. Provide copy of sign-in sheets to document attendance at all sessions.
- C. Include training agenda and materials used during training sessions, organized by discipline and submitted as a bookmarked PDF, limited to 500 pages.
- D. Demonstration and Training Video Recordings: Submit one copy of any training modules recorded (.mov) with the project documentation package.

1.4 QUALITY ASSURANCE

- A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in [Section 014500, "Contractor Quality Control"] experienced in operation and maintenance procedures and training.
- B. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
 1. Inspect and discuss locations and other facilities required for instruction.
 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
 3. Review required content of instruction.
 4. For instruction that must occur outside, review weather and forecast weather conditions and procedures to follow if conditions are unfavorable.

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
 1. Give an overview of each system and explain each system feature in detail.
 2. Show each piece of equipment and explain its function.
 3. Demonstrate the system configuration, using one-line diagrams or other graphic techniques.

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4. Provide a narrative of the system description, explaining acronyms, technical terms, system concepts, and functions within the system description.
 5. Thoroughly explain and demonstrate all system operation, programming, and maintenance functions. Include warnings, where applicable, to preclude incorrect system procedures.
 6. The operation program shall contain a specific segment showing only the information that a novice would need to know to operate the system on a routine day-to-day basis; alarms being received, system trouble, responses required, etc. This segment should not exceed **X** hours.
- B. Training Modules:** Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that the participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Systems and equipment operation manuals.
 - c. Systems and equipment maintenance manuals.
 - d. Product maintenance manuals.
 - e. Project Record Documents.
 - f. Identification systems.
 - g. Warranties and bonds.
 - h. Maintenance service agreements and similar continuing commitments.
 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.

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- e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.

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g. Instruction on the use of special tools.

8. Repairs: Include the following:

- a. Diagnosis instructions.
- b. Repair instructions.
- c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
- d. Instructions for identifying parts and components.
- e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in [Section 017823 "Operation and Maintenance Data."]
- B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 1. Owner will furnish Contractor with names and positions of potential participants.
- B. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
 1. Schedule training with Owner, with at least seven days' advance notice.
- C. Training Location and Reference Material: Conduct training on-site in the complete and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of [Architect to insert criteria here] performance-based test.
- E. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION