

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 25 05 01 - EMCS: General Requirements.

1.2 REFERENCES

- .1 Canada Labour Code (R.S. 1985, c. L-2)/Part I - Industrial Relations.
- .2 Canadian Standards Association (CSA International).
 - .1 CSA Z204-F94(C1999), Guidelines for Managing Indoor Air Quality in Office Buildings.

1.3 DEFINITIONS

- .1 BC(s) - Building Controller(s).
- .2 OWS - Operator Work Station.
- .3 Acronyms and Definitions: Refer to Section 25 05 01 - EMCS: General Requirements.

1.4 SUBMITTALS

- .1 Submit documents and samples required.
 - .2 Submit detailed preventative maintenance schedule for system components to Departmental Representative.
 - .3 Submit detailed inspection reports to Departmental Representative.
 - .4 Submit dated, maintenance task lists to Departmental Representative and include the following sensor and output point detail, as proof of system verification:
 - .1 Point name and location.
 - .2 Device type and range.
 - .3 Measured value.
 - .4 System displayed value.
 - .5 Calibration detail.
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- .6 Indication if adjustment required.
- .7 Other action taken or recommended.
- .5 Submit network analysis report showing results with detailed recommendations to correct problems found.
- .6 Records and logs: in accordance with Architectural Specifications.
 - .1 Maintain records and logs of each maintenance task on site.
 - .2 Organize cumulative records for each major component and for entire EMCS chronologically.
 - .3 Submit records to Departmental Representative, after inspection indicating that planned and systematic maintenance have been accomplished.

1.5 MAINTENANCE SERVICE DURING WARRANTY PERIOD

- .1 Provide services, materials, and equipment to maintain EMCS for specified warranty period. Provide detailed preventative maintenance schedule for system components as described in Submittal article.
 - .2 Emergency Service Calls:
 - .1 Initiate service calls when EMCS is not functioning correctly.
 - .2 Qualified control personnel to be available during warranty period to provide service to "CRITICAL" components whenever required at no extra cost.
 - .3 Furnish Departmental Representative with telephone number where service personnel may be reached at any time.
 - .4 Service personnel to be ready on site to service EMCS within 2 hours after receiving request for service.
 - .5 Perform work continuously until EMCS is restored to reliable operating condition.
 - .3 Operation: Foregoing and other servicing to provide proper sequencing of equipment and satisfactory operation of EMCS based on original design conditions and as recommended by manufacturer.
 - .4 Work Requests: Record each service call request, when received separately on approved form and include:
 - .1 Serial number identifying component involved.
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- .2 Location, date, and time call received.
- .3 Nature of trouble.
- .4 Names of personnel assigned.
- .5 Instructions of work to be done.
- .6 Amount and nature of materials used.
- .7 Time and date work started.
- .8 Time and date of completion.
- .5 Provide system modifications in writing.
 - .1 No system modification, including operating parameters and control settings, to be made without prior written approval of Departmental Representative.

1.6 MAINTENANCE CONTRACT

- .1 Provide complete technical support and expertise to the Departmental Representative and the Commissioning Manager in order to help prepare and implement the maintenance and preventative maintenance contracts.
- .2 Maintenance contracts must include:
 - .1 Annual control points verification, on the field, in order to verify their functionality and calibration.
 - .2 Annual visits.
 - .3 Emergency visits during occupied hours, per year.
 - .4 Emergency visits during unoccupied hours, per year.
 - .5 Complete inventory of installed system.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.
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PART 3 - EXECUTION

3.1 ON FIELD QUALITY CONTROL

- .1 Perform at least three minor and one major inspection (or more if the manufacturer requires so) per year. Provide a detailed report to the Departmental Representative for each inspection.
 - .2 Perform the inspections during normal office hours, between 8:00 am and 4:30 pm, from Monday to Friday, except on holidays.
 - .3 The following inspections are minimum requirements and their results should not be considered as a satisfactory operating state.
 - .1 All calibrations must be completed with testing equipment that is certified to be at least 50% more accurate than the values used by the system.
 - .2 Verify and calibrate every input/output on the field in accordance with Canada Labour Code, Part 1 and CSA Z204 Standards.
 - .3 Provide a dated maintenance tasks list in accordance with the Submittal Procedure articles.
 - .4 Minor inspections must include, but are not limited to the following:
 - .1 Visual and operation control of the building controllers, hardware, interface panel and other panels.
 - .2 If needed, fan verification and replacement of filters and controls.
 - .3 Visual inspections to spot flaws and air leakage; make sure that the pressure and pneumatic elements are correct.
 - .4 Review the system performance with the Departmental Representative to discuss the changes required.
 - .5 Major inspections must include, but are not limited to the following:
 - .1 Minor inspections.
 - .2 Work station peripheral equipment cleaning, building controllers, controller interfaces and other panels, otter, and inner microprocessor faces.
 - .3 Signal verification, voltage and system insulation, buildings controllers, hardware, interfaces, and other panels.
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- .4 Verify the calibration of every input/output element and recalibrate or replace them if necessary.
- .5 Mechanical adjustment and printer maintenance.
- .6 Diagnostic tests of the system software, if needed.
- .7 Software installation and update to make sure every component works on the latest version.
 - .1 Perform network analysis and provide a report in accordance with the Submittals Procedure section.
- .6 Correct the flaws found during the maintenance inspections and ambient controls.
- .7 Continue flaws corrections and system optimization.
- .8 The testing of systems that are affected by normal occupation and seasonal variations must be done during four consecutive seasons, after the job site has been received, transferred and occupied.
 - .1 Systems that are affected by the climate must be submitted to two tests: During winter and summer conditions when Work is almost completed.

END OF SECTION
