
Part 1 General**1.1 RELATED SECTIONS**

- .1 Section 25 01 11 - EMCS: Start-up, Verification and Commissioning.
- .2 Section 25 05 01 - EMCS: General Requirements.

1.2 DEFINITIONS

- .1 Acronyms and definitions: refer to Section 25 05 01 - EMCS: General Requirements.

1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 00 10 – General Instructions and coordinate with requirements in this Section.
- .2 Shop Drawings to consist of 1 soft copy of design documents, shop drawings, product data and software.
- .3 Shop Drawings to be completely indexed and coordinated package to assure compliance with contract requirements and arranged in same sequence as specification and cross-referenced to specification section and paragraph number.
- .4 Shop Drawings to be in PDF format, structured using menu format for easy loading and retrieval on OWS.

1.4 PRELIMINARY SHOP DRAWING REVIEW

- .1 Submit preliminary shop drawings within 15 working days of award of contract and include following:
 - .1 Specification sheets for each item. To include manufacturer's descriptive literature, manufacturer's installation recommendations, specifications, drawings, diagrams, performance and characteristic curves, catalogue cuts, manufacturer's name, trade name, catalogue or model number, nameplate data, size, layout, dimensions, capacity, other data to establish compliance.
 - .2 Detailed system architecture showing all points associated with each controller and where new EMCS ties into existing control equipment.
 - .3 Spare point capacity of each controller by number and type.
 - .4 Controller locations.
 - .5 Auxiliary control cabinet locations.
 - .6 Single line diagrams showing cable routings, conduit sizes, spare conduit capacity between control centre, field controllers and systems being controlled.
- .2 Submit detailed shop drawings within 40 working days after award of contract and before start of installation and include following:
 - .1 Corrected and updated versions (hard copy only) of submissions made during preliminary review.

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- .2 Wiring diagrams.
 - .3 Interface wiring diagrams showing termination connections and signal levels for equipment to be supplied by others.
 - .4 Shop drawings for each input/output point, sensors, transmitters, showing information associated with each particular point including:
 - .1 Sensing element type and location.
 - .2 Transmitter type and range.
 - .3 Associated field wiring schematics, schedules and terminations.
 - .4 Complete Point Name Lists.
 - .5 Setpoints, curves or graphs and alarm limits (high and low, 3 types critical, cautionary and maintenance), signal range.
 - .6 Software and programming details associated with each point.
 - .7 Manufacturer's recommended installation instructions and procedures.
 - .5 Control schematics, narrative description, CDL's fully showing and describing automatic and manual procedure required to achieve proper operation of project, including under complete failure of EMCS.
 - .6 Graphic system schematic displays of systems with point identifiers and textual description of system, and typical floor plans as specified.
 - .7 Listing and example of specified reports.
 - .8 Type and size of memory with statement of spare memory capacity.
 - .9 Full description of software programs provided.
 - .10 Sample of "Operating Instructions Manual" to be used for training purposes.
 - .11 Outline of proposed start-up and verification procedures. Refer to Section 25 01 11 - EMCS: Start-up, Verification and Commissioning.

1.5 QUALITY ASSURANCE

- .1 Preliminary Design Review Meeting: Convene meeting within 30 working days of award of contract to:
 - .1 Undertake functional review of preliminary design documents, resolve inconsistencies.
 - .2 Resolve conflicts between contract document requirements and actual items (e.g.: points list inconsistencies).
 - .3 Review interface requirements of materials supplied by others.
 - .4 Review "Sequence of Operations".
- .2 Contractor's programmer to attend meeting.
- .3 Departmental Representative retains right to revise sequence or subsequent CDL prior to software finalization without cost to Departmental Representative.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION