

Part 1 General

1.1 SUMMARY

- .1 Section Includes.
 - .1 Methods and procedures for shop drawings submittals, preliminary and detailed review process including review meetings, for building Energy Monitoring and Control System (EMCS).

1.2 DEFINITIONS

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

1.3 DESIGN REQUIREMENTS

- .1 Preliminary Design Review: to contain following contractor and systems information.
 - .1 Location of local office.
 - .2 Description and location of installing and servicing technical staff.
 - .3 Location and qualifications of programming design and programming support staff.
 - .4 Names of sub-contractors and site-specific key personnel.
 - .5 Sketch of site-specific system architecture.
 - .6 Specification sheets for each item including memory provided, programming language, speed, type of data transmission.
 - .7 Descriptive brochures.
 - .8 Sample CDL and graphics (systems schematics).
 - .9 Response time for each type of command and report.
 - .10 Item-by-item statement of compliance.
 - .11 Proof of demonstrated ability of system to communicate utilizing BACnet.

1.4 DETAILED SHOP DRAWING REVIEW

- .1 Submit detailed shop drawings within 60 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.
 - .2 Wiring diagrams.
 - .3 Piping diagrams and hook-ups.
 - .4 Interface wiring diagrams showing termination connections and signal levels for equipment to be supplied by others.
 - .5 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.
- .8 Input and output signal levels or pressures where new system ties into existing control equipment.
- .6 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.
- .7 Complete system CDL's including companion French language explanations on same sheet but with different font and italics. CDL's to contain specified energy optimization programs.
- .8 Listing and example of specified reports.
- .9 Listing of time of day schedules.
- .10 Mark up to-scale construction drawing to detail control room showing location of equipment and operator work space.
- .11 Type and size of memory with statement of spare memory capacity.
- .12 Full description of software programs provided.
- .13 Sample of "Operating Instructions Manual" to be used for training purposes.

1.5 QUALITY ASSURANCE

- .1 Preliminary Design Review Meeting: Convene meeting within 45 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