

**1**            **GENERAL**

**1.1**            **SECTION INCLUDES**

- .1            Commissioning forms to be completed for equipment, system and integrated system.

**1.2**            **RELATED SECTIONS**

- .1            Section 01 78 00 – Closeout Submittals.
- .2            Section 01 91 13 – Commissioning (Cx) Requirements.
- .3            Section 01 91 41 – Commissioning (Cx) Training.

**1.3**            **INSTALLATION VERIFICATION CHECK LISTS**

- .1            Prior to initiation of performance verification the CxA will develop and provide to the contractor the required project specific Commissioning plan and installation verification check lists.
- .2            Completed Commissioning forms to be submitted to Owner’s Representative for review and approval.
- .3            Include the following data:
  - .1            Product manufacturer's installation instructions and recommended checks.
  - .2            Special procedures as specified in relevant technical sections.
  - .3            Items considered good installation and engineering industry practices deemed appropriate for proper and efficient operation.
- .4            Equipment manufacturer's installation/start-up check lists are acceptable for use in conjunction with installation verification check lists forming part of the Cx manual. Manufacturer’s check sheets used must be attached to final document submittals.
- .5            Installer to sign check lists upon completion, certifying stated checks and inspections have been performed. Completed check lists to be included in Commissioning Manual submitted by the contractor at completion of project.
- .6            Use of check lists will be considered part of commissioning process.

**1.4**            **PERFORMANCE VERIFICATION CHECK LISTS**

- .1            The CxA will develop and provide to the Contractor the required project specific Commissioning plan and performance verification check lists.
- .2            Completed Commissioning forms to be submitted to Owner’s Representative for review and approval.

- .3 Strategy for Use:
- .1 Contractor will provide required shop drawings information and verify correct installation and operation of items indicated on these forms.
  - .2 Confirm operation as per design criteria and intent.
  - .3 Identify variances between design and operation and reasons for variances.
  - .4 Verify operation in specified normal and emergency modes and under specified load conditions.
  - .5 Record analytical and substantiating data.
  - .6 Verify reported results.
  - .7 Form to bear signatures of recording technician and reviewed and signed off by Owner's Representative as indicated on the forms.
  - .8 Reported results in true measured SI (metric) unit values.
  - .9 Maintain copy on site during start-up, testing and commissioning period.
  - .10 Forms to be both hard copy and electronic format.
  - .11 Upon completion of Performance Verification the contractor shall submit all completed forms to the Owner's Representative.
  - .12 Final submittal shall include all Installation Verification, Performance Verification check lists, training records, maintenance materials transmittals, written warranties and a list of all Cx activities postponed due to seasonal, climatic, occupancy, or other reasons beyond the contractor's control.

**2            PRODUCTS (NOT APPLICABLE)**

**3            EXECUTION (NOT APPLICABLE)**

**END OF SECTION**