

SECTION 26 08 00
COMMISSIONING OF ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The requirements of this Section apply to all sections of Division 26.
- B. This project will have selected systems commissioned by a third party commissioning agent hired by the Contractor and approved by the Owner. The complete list of equipment and systems to be commissioned are specified. The commissioning process, which the Contractor is responsible to execute, is defined herein. Commissioning is intended to verify system operations during and after startup, testing and adjusting has been accomplished by the Contractor.
- C. Commissioning is a systematic process of verifying that the installed systems perform interactively according to the construction documents and the VA's operational needs. The commissioning process shall encompass and coordinate the system documentation, equipment startup, control system calibration, testing and balancing, performance testing and training. Commissioning during construction is intended to achieve the following specific objectives according to the contract documents:
 - 1. Verify that the applicable equipment and systems are installed in accordance with the contract documents and according to the manufacturer's recommendations.
 - 2. Verify and document proper integrated performance of equipment and systems.
 - 3. Verify that Operations & Maintenance documentation is complete.
 - 4. Verify that all components requiring servicing can be accessed, serviced and removed without disturbing nearby components including ducts, piping, cabling or wiring.
 - 5. Verify that the VA's operating personnel are adequately trained to enable them to operate, monitor, program, adjust, maintain, and repair building systems in an effective and energy-efficient manner.
 - 6. Document the successful achievement of the commissioning objectives listed above.
- D. The commissioning process does not take away from or reduce the responsibility of the Contractor to provide a finished and fully functioning product.

- E. The Commissioning Agent, both the firm and individual designated as the Commissioning Agent, shall be certified by the National Electrical Testing Agency. Proof of certification shall be submitted to the Contracting Officer.

1.2 RELATED WORK

- A. Section 01 00 00 GENERAL REQUIREMENTS.
- B. Section 01 33 23 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

1.3 SUMMARY

This Section includes requirements for commissioning the electrical systems, subsystems and equipment.

1.4 COMMISSIONED SYSTEMS

- A. Commissioning of a system or systems specified in this Division is part of the construction process. Documentation and testing of these systems, as well as training of the VA's Operation and Maintenance personnel, is required in cooperation with the VA and the Contractor independent Commissioning Agent.
- B. The following Electrical systems will be commissioned:
 - 1. Standby Generator Systems (Fuel delivery battery charging and instrumentation, muffler and exhaust system, and vibration isolation).
 - 2. Generator Paralleling Controls and Switchboards (Instrumentation, metering and gages, and controls).
 - 3. Generator Power Distribution Systems (Circuit breaker settings, metering, gages, and controls).
 - 4. Power Distribution Systems (Grounding tests, coordination study review, major circuit breaker settings, meters and gages, and controls).
 - 5. Automation, controls and monitoring, including monitoring by Johnson Controls metasys system.

1.6 SUBMITTALS

- A. The commissioning process requires review of selected Submittals. The Commissioning Agent will provide a list of submittals that will be reviewed by the Commissioning Agent. This list will be reviewed simultaneously by the Contractor, Engineer and the COTR. Refer to Section 01 33 23 SHOP DRAWINGS, PRODUCT DATA, and SAMPLES for further details.

- B. The commissioning process requires Submittal review simultaneously with engineering review.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PRE-FUNCTIONAL CHECKLISTS

The Contractor shall complete Pre-Functional Checklists to verify systems, subsystems, and equipment installation is complete and systems are ready for Systems Functional Performance Testing. The Commissioning Agent will prepare Pre-Functional Checklists to be used to document equipment installation. The Contractor shall complete the checklists. Completed checklists shall be submitted to the VA and to the Commissioning Agent for review. The Commissioning Agent may spot check a sample of completed checklists. If the Commissioning Agent determines that the information provided on the checklist is not accurate, the Commissioning Agent shall return the marked-up checklist to the Contractor for correction and resubmission. If the Commissioning Agent determines that a significant number of completed checklists for similar equipment are not accurate, the Commissioning Agent shall select a broader sample of checklists for review. If the Commissioning Agent determines that a significant number of the broader sample of checklists is also inaccurate, all the checklists for the type of equipment will be returned to the Contractor for correction and resubmission.

3.2 CONTRACTORS TESTS

Contractor tests as required by other sections of Division 26 shall be scheduled and documented. The Commissioning Agent shall witness selected Contractor tests. Contractor tests shall be completed prior to scheduling Systems Functional Performance Testing.

3.3 SYSTEMS FUNCTIONAL PERFORMANCE TESTING:

The Commissioning Process includes Systems Functional Performance Testing that is intended to test systems functional performance under steady state conditions, to test system reaction to changes in operating conditions, and system performance under emergency conditions. The Commissioning Agent will prepare detailed Systems Functional Performance Test procedures for review and approval by the Owner. The Contractor shall review and comment on the tests prior to

approval. The Contractor shall provide the required labor, materials, and test equipment identified in the test procedure to perform the tests. The Commissioning Agent shall witness and document the testing. The Contractor shall sign the test reports to verify tests were performed.

3.4 TRAINING OF VA PERSONNEL

Training of the VA's operation and maintenance personnel is required in cooperation with the VA and Commissioning Agent. Provide competent, factory authorized personnel to provide instruction to operation and maintenance personnel concerning the location, operation, and troubleshooting of the installed systems. The instruction shall be scheduled in coordination with the VA after submission and approval of formal training plans. Provide four hours of training on 2 separate dates selected by VA

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