SECTION 262250 – GENERATOR AND LOAD BANK DOCKING STATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes combination Docking Stations for portable Generator rated 600 V and less and Load Bank connection rated 600 V and less.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

1. Include plans, elevations, sections, details showing minimum clearances, conductor entry provisions, gutter space, and installed features and devices.
2. Single-Line Diagram: Show connections between docking station, power sources, and load.

1.3 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.4 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of transfer switch or transfer switch components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 50.

C. Comply with ETL 1008 unless requirements of these Specifications are stricter.

D. Comply with NFPA 70.

E. Indicated Current Ratings: Apply as defined in ETL 1008 for continuous loading and total system transfer.

F. Tested Short-Circuit Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to ETL 1008.
1. Short-time withstand capability for three cycles, 65 KAIC.

2.2 LOWER 'B' DOCKING STATION

A. Basis-of-Design Products subject to compliance with requirements provide TRYSTAR, INC. DWG. NO. GDS-205P-LLMF-AKQ (The Vanjen Group, sales@vanjen.net) or comparable product by one of the following:

1. Eaton
2. ASCO Power Technologies
3. Russ Electric, Inc.Generator and Load Bank Docking Station, 2000 A, 480/277v, Auto Start, Load Dump, Receptacle, Kirk Key access.
4. Nema 3R Construction
5. Phase Rotation monitor.
6. 4X Two Conductor 600 MCM mechanical lugs per phase on busbar for permanent line connection. (Wire range: #4 – 600 mcm)
7. 4X Two Conductor 600 MCM mechanical lugs per phase on busbar for permanent load connection.
8. E1016 Series female CAMLOK panel mounts with flip covers for portable load bank connection.
9. E1016 Series male CAMLOK panel mounts with flip covers for portable generator connection.
10. 10X Single conductor 350 mcm mechanical lugs for portable generator hardware connection. (Wire range #6-350 mcm).
11. Removable Access Panels.
12. Conduit entry area.

2.3 CLUSTER 1,3,4 DOCKING STATIONS

A. Basis-of-Design Products subject to compliance with requirements provide TRYSTAR, INC. DWG. NO. GDS-085L-LMF-AJKQ or comparable product by one of the following:

1. Eaton
2. ASCO Power Technologies
3. Russ Electric, Inc.

B. Generator and Load Bank Docking Station, 800 A, 480/277v, Auto Start, Load Dump, Receptacle, Kirk Key access.

1. Nema 3R Construction
2. Phase Rotation monitor.
3. 2X Two Conductor 600 mcm mechanical lugs per phase on busbar for permanent line connection. (Wire range: #4 – 600 mcm)
4. 2X Two Conductor 600 mcm mechanical lugs per phase on busbar for permanent load connection. (Wire range: #4 – 600 mcm)
5. E1016 Series female CAMLOK panel mount with flip covers for portable load bank connect.
6. E1016 Series male CAMLOK panel mounts with flip covers for portable generator connection.
7. 10X Single conductor 350 mcm mechanical lugs for portable generator hardware connection. (Wire range #6-350 mcm).
8. Removable Access Panels.
9. Conduit entry area.

2.4 GENERAL REQUIREMENTS

A. Unit shall be a dual purpose generator/load bank docking station capable of complying with the latest NEC 700.3 requirements. NEC 700.3. Dual purpose docking station shall include two sets of Camloks. One set, readily accessible, for connection of a temporary load bank. The second set,

shall be behind a Kirk Key Interlocked door. Permanent generator Circuit Breaker shall be Kirk Keyed in common with the access panel covering the portable generator Camloks so that the portable generator cannot be connected to the Load bus while the permanent generator is connected to the Load bus.

1. A loose Kirk Keyed interlock device shall be provided for the existing permanent generator Circuit Breaker, sized for use with the existing circuit breaker.

B. Entire package must be listed to ETL or UL 1008 Standards. UL listing of individual components is not acceptable.

C. Enclosures:

1. Pad mount, NEMA 3R rain-tight, aluminum enclosure.
   a. Pad-lockable front door shall include a hinged access plate at the bottom for entry of cables from portable generator or portable load bank. NEMA 3R integrity shall be maintained with access plate open for cable entry.
   b. Front, side, and bottom through a front access panel shall be accessible for maintenance.
   c. Top, side, and bottom through a front access panel shall be accessible for permanent cabling.
2. Finishes:
   a. Paint after fabrication. Powder coated Hammer Gray.
3. Unit shall contain Micro-Switch on KK Access door for annunciation on supplied remote annunciator panel

D. Phase, Neutral, and Ground Buses:

1. Material: Silver-plated, Tin-plated or Hard-drawn copper, specified upon order.
2. Equipment Ground Bus: bonded to box.
3. Isolated Ground Bus: insulated from box.
4. Ground Bus: 25%, 50% or 100% of phase size.
5. Neutral Bus: Neutral bus rated 100 percent of phase bus.
6. Round edges on bus.
7. Entire construction shall be Bussing. Cabling between Camloks or sections shall not be acceptable.

E. Load bank and portable generator connectors shall be Camlok style mounted on gland plate (male for the portable generator and female for the portable load bank. Male Camloks to be behind Kirk Key Interlocked Door.

1. An additional Set of Mechanical Lugs, accessible from the front of the docking station, shall also be required for temporary generator connection.

2. Camloks are required to have phase color identification paint at their mounting point to the docking station. Camlok phase paint shall be as follows
   a. A phase – Brown
   b. B phase – Yellow
   c. C phase – Purple or Orange
   d. N Neutral – White
   e. G Ground - Green

F. Permanent generator connectors shall be broad range set-screw type, located behind an aluminum barrier.

G. Voltage & Phase shall be as shown on project one line drawing. Camloks shall be color coded as appropriate for the specified voltage.

H. Amperage rating shall be as shown on project one line drawing.

I. A Load Dump Circuit will be provided, so that if the Utility power were to fail during a temporary load bank test, the load bank would shed itself and allow the generator to pick up the building load.

J. A Remote Start Terminal will be provided, so that a temporary generator can be remotely start and stopped in an identical manner as the permanent generator set.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine elements and surfaces to receive Generator Docking Station for compliance with installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Surface, Flush or Base Mounted: Specified with order.
   1. Install anchor bolts to elevations required for proper attachment to Generator Docking Station.

B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

3.3 FIELD QUALITY CONTROL

A. Third Party Tests and Inspections to include the following:
   1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
   2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
   3. Perform the following infrared scan tests and inspections and prepare reports:
      a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each Generator Docking Station. Remove front panels so joints and connections are accessible to portable scanner.

B. Generator Docking Station will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports, including a certified report that identifies Generator Docking Station and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.4 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain docking station and related equipment.

B. Coordinate this training with that for generator equipment.

END OF SECTION 262250