

**ADDENDUM NO. 2  
NATURAL GAS CONVERSION & EMERGENCY GENERATOR  
AT THE DELAWARE ARMY NATIONAL GUARD  
GEORGETOWN READINESS CENTER  
109 W. PINE STREET, GEORGETOWN, DE 19947  
DE ARNG CONTRACT NO. 2018-001**

- 1.0 This addendum, Addendum No. 2, shall be made part of the Project Manual and Drawings dated April 2018 for the Natural Gas Conversion & Emergency Generator project at the Delaware Army National Guard Georgetown Readiness Center.
- 2.0 Sealed bids for DEARNG Contract No. 2018-001 – Georgetown Readiness Center Natural Gas Conversion & Emergency Generator, will be received by the Delaware Army National Guard at the Security Officers desk in the Main Lobby of the Biden National Guard/Reserve Center, One Vavala Way, New Castle, Delaware, 19720 until **2:00 PM local time on May 17, 2018**, at which time they will be publicly opened and read aloud in the Multi-Purpose Room. Allow ample time to enter the facility since the site is secure and each vehicle entering the facility will need to pass through security.
- 3.0 Changes to Specifications
  - 3.1 Section 23 51 23 Gas Vents
    - a. **DELETE** entire specification section included in Bid Set Project Manual and **INSERT** revised specification section attached.
- 4.0 Changes to Drawings
  - 4.1 Drawing M-2: Replace existing drawing with drawing attached to reflect the following revisions:
    - a. Revisions to Drawings Notes.
    - b. Revisions to boiler venting, chimney fan, equipment and controls in Boiler Room.
  - 4.2 Drawing M-3: Replace existing drawing with drawing attached to reflect the following revisions:
    - a. Revisions to Drawings Notes.
    - b. Revisions to boiler venting, chimney fan, equipment and controls in Boiler Room.
  - 4.3 Drawing M-4: Replace existing drawing with drawing attached to reflect the following revisions:
    - a. Revisions to Fan Schedule and Boiler Room Airflow Diagram.
  - 4.4 Drawing E-4:
    - a. Omit 3P-30A weatherproof disconnect switch, wiring and all appurtenances for chimney fan CF-1. Omit electrical connection to fan VFD and homerun to Panel Sub-A in its entirety. Relabel circuit breaker Sub-A-14,16,18 as “Spare”.

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- 4.5 Drawing E-7:
- a. Panel Sub-A Schedule: Omit wiring for circuit 14,16,18 in its entirety. Retain 3P-20A circuit breaker as specified and relabel as "Spare".
- 5.0 Substitution Requests
- 5.1 There were two (2) substitution submissions for the generator & ATS. Neither have been deemed to be approved equals.
- 6.0 Questions/Clarifications
- 6.1 Q. Detail 4/M4 - Clarify if the generator gas drip leg and Y strainer should be outside? This is a potential freeze hazard and should be indoors.
    - A. The dirt leg can be located inside the building in lieu of being at the generator. The underground piping to the generator will also act as an additional dirt leg/sediment trap. The fuel strainer at the generator shall remain.
  - 6.2 Q. Detail 2/M4 - Clarify that the 1-1/2" is required for the vent on the boiler gas train. Seems larger than needed.
    - A. The 1-1/2" vent shall remain as designed. Chesapeake Utilities has asked on previous projects that the vent piping increase 1 size for every 15' of run.



Matthew Galinskie, C.E.A.

MG/mg  
17-1251B Georgetown RC Addendum No 2

Attachments: Specification Section 23 51 23 Gas Vents  
Drawings M-2, M-3, M-4

cc: All Registered Plan Holders

## SECTION 23 51 23

### GAS VENTS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section Includes:

- 1. Listed double-wall vents.

- B. Related Requirements:

- 1. Section 235113.11 "Draft Control Fans" for draft inducer fans, venturi-draft inducer fans, mechanical-draft vent fans, vent exhaust fans, and combustion-air fans.
- 2. Section 235113.16 "Vent Dampers" for motorized and barometric dampers.
- 3. Section 235116 "Fabricated Breechings and Accessories" for listed, refractory-lined metal breechings and field-fabricated metal breechings.
- 4. Section 235133 "Insulated Sectional Chimneys" for listed chimney liners; listed building-heating-appliance chimneys; listed, refractory-lined metal chimneys; and field-fabricated chimneys.

##### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for product.

- B. Shop Drawings: For vents.

- 1. Include plans, elevations, sections, and attachment details.
- 2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
- 3. Detail fabrication and assembly of hangers and seismic restraints.

##### 1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

- B. Sample Warranty: For special warranty.

## 1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel," for hangers and supports.
  - 2. AWS D9.1/D9.1M, "Sheet Metal Welding Code," for shop and field welding of joints and seams in vents.
- B. Certified Sizing Calculations: Manufacturer shall certify venting system sizing calculations.

## PART 2 - PRODUCTS

### 2.1 POSITIVE PRESSURE FLUE

- A. Provide factory-built modular connector, manifold and stack system that is tested and listed by the Underwriters' Laboratories, Inc. for use with building heating equipment and appliances which produce exhausted flue gases at a temperature not exceeding 1000oF (Fahrenheit) under continuous operating conditions, and not exceeding 1400 oF (Fahrenheit) under intermittent operating conditions (see UL103) when burning gaseous, solid or liquid fuels as described in NFPA-211. Additionally, the vent system shall be U.L. 103 positive pressure tested and listed.
- B. The U.L. listed air insulated flue gas vent system shall have skin temperatures that have been obtained by Underwriters Laboratories (UL) test procedures. The published surface temperatures shall be the result of the UL-103 1000o Fahrenheit chimney test.
- C. CONSTRUCTION
  - 1. The double wall flue system shall have a 304 stainless steel inner liner and a 304 stainless steel outer jacket. The materials and construction of the modular sections and accessories shall be as specified by the terms of the product's U.L. listing.
  - 2. Air insulation between the inner liner and outer jacket shall be a nominal one-inch thick.
- D. Aluminized steel surfaces exposed to the elements shall be protected by a minimum of one base coat of primer and one finish coat of corrosion resistant paint suitable for outer jacket skin temperatures of the given application. All primer and paint to be supplied by the installing contractor and shall be equivalent to series V2100 as manufactured by Rust-Oleum. Alternatively, an outer jacket constructed of 304 or 316 stainless steel may also be considered in lieu of painting.
- E. This stack system shall be designed and installed to be gas tight and thus prevent leakage of combustion products into a building.
- F. Inner pipe joints shall be securely connected and sealed with factory supplied overlapping V-bands and appropriate sealant as specified in the manufacturer's installation instructions.
- G. The vent system shall be designed to compensate for all flue gas induced thermal expansion.
- H. MANUFACTURERS
  - 1. Basis of Design: Selkirk Commercial/Industrial Model PS
  - 2. Duravent
  - 3. Metal Fab

## 2.2 COMBUSTION AIR FAN

- A. Combustion air intake system designed and listed for use with atmospheric or induced combustion gas heating equipment.
- B. Shall function as the source of combustion air, monitored by the airflow fan proving switch. System shall be interlocked with the burner if a malfunction occurs. Provide all associated wiring required for interlock.
- C. Include all fan and duct mounting hardware.
- D. Include hood with backing plate, bird screen, take off collar and ductwork to outdoors.
- E. Manufacturers:
  - 1. Tjerlund
  - 2. Exhasuto

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 APPLICATION

- A. Listed Type B and BW Vents: Vents for certified gas appliances.

### 3.3 INSTALLATION

- A. When installed according to the manufacturer's installation instructions, the flue system and its supporting system shall resist side loads at least 1.5 times greater than the weight per foot of the piping for both horizontal and vertical portions of the system.
- B. The prefabricated flue system shall be installed according to the manufacturer's installation instructions and shall conform to all applicable state and local codes.
- C. Provide all modular straight sections, fittings, supports, guides, expansion joints, guy sections, guy tensioners, roof thimbles, roof flashings, storm collars and stack cap terminations as required to provide a complete system per the manufacturer's installation instructions.
- D. The entire flue system from the appliance outlet to the termination point, including all accessories, except as noted, shall be from one manufacturer.
- E. The vertical stack termination shall be no less than two feet above any portion of the building within ten feet of the stack penetration (see NFPA-211).
- F. Roof penetrations shall be suitable for the specified roof construction and shall comply with the manufacturer's installation instructions.

### 3.4 CLEANING

- A. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris, and repair damaged finishes.

### 3.5 INSTALLATION OF COMBUSTION AIR FAN

- A. Contractor shall provide all required control wiring interlocks for a complete and operational system. This shall include all interlocks with the boiler, associated safeties, sensors and controllers.
- B. All control wiring shall be installed in EMT conduit with compression fittings. Refer to Division 26 for conduit and wire requirements.
- C. Contractor shall test and verify the operation of the system.

### 3.6 WARRANTY

- A. The prefabricated flue system shall be warranted against functional failure due to defects in material and manufacturer's workmanship for a period of 15 years from date of installation.
- B. The inner diameter of the flue system shall be verified by the manufacturer's venting computations. The computations used shall be technically sound, follow ASHRAE calculation methods and shall incorporate the specific flow characteristics of the inner pipe. The contractor shall furnish the exact operating characteristics of all equipment to the factory representative.
- C. The manufacturer shall provide "to scale" drawings depicting the actual layout. The prefabricated flue system shall be installed as designed by the manufacturer and in accordance with the terms of the manufacturer's warranty and in conjunction with sound engineering practices.
- D. The factory built modular flue system shall be furnished by a vendor organization that assures design, installation and services coordination. As well as, providing "in-warranty" and "post-warranty" unified responsibility for owner, architect, consulting engineer and contractor.

END OF SECTION