SECTION 235523

GAS-FIRED RADIANT HEATERS

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**NOTE TO SPECIFIER**

*Use this Specification Section for Mail Processing Facilities.*

***This is a Type 1 Specification with completely editable text; therefore, any portion of the text can be modified by the A/E preparing the Solicitation Package to suit the project.***

*For Design/Build projects, do not delete the Notes to Specifier in this Section so that they may be available to Design/Build entity when preparing the Construction Documents.*

*For the Design/Build entity, this specification is intended as a guide for the Architect/Engineer preparing the Construction Documents.*

*The MPF specifications may also be used for Design/Bid/Build projects. In either case, it is the responsibility of the design professional to edit the Specifications Sections as appropriate for the project.*

*Text shown in brackets must be modified as needed for project specific requirements.* *See the “Using the USPS Guide Specifications” document in Folder C for more information.*

*The last date that USPS revised this standard specification section occurs in two places, at the end of this section and in the Table of Contents. If the date in this section matches the date in the Table of Contents, then you are using the latest version. Do not delete or revise the “last revised” date at the end of the section during the development of the Project Manual.*

*The footer in this section should be edited to replace the text, “USPS MPF SPECIFICATION” with the project name, and the blank date in the center should be replaced with the submission date, for interim design reviews, or the issue date of the completed Project Manual.*

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1. GENERAL
   1. SUMMARY
      1. This Section includes gas-fired, tubular infrared radiant heaters.
   2. SUBMITTALS
      1. Product Data: For each type of gas-fired radiant heater indicated. Include rated capacities, operating characteristics, and accessories.
      2. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
         1. Wiring Diagrams: Power, signal, and control wiring.
      3. Field quality-control test reports.
      4. Operation and maintenance data.
   3. QUALITY ASSURANCE
      1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
   4. WARRANTY
      1. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of gas-fired radiant heater that fails in materials or workmanship within specified warranty period.
         1. Warranty Period: Five years from date of Substantial Completion.
2. PRODUCTS
   1. TUBULAR INFRARED HEATERS
      1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
         1. Combustion Research Corporation.
         2. Gas-Fired Products Inc.; Space-Ray Div.
         3. Reznor.
         4. Roberts-Gordon, Inc.
         5. Schwank Inc.
         6. Solaronics, Inc.
         7. Sterling HVAC Products; Div. of Mestek Technology Inc.
      2. Description: Factory assembled, piped, and wired, and complying with ANSI Z83.20/CSA 2.34.
      3. Fuel Type: Design burner for gas having characteristics same as those of gas available at Project site.
      4. Combustion Tubing: 4-inch-diameter steel with high-emissivity, high-temperature, corrosion-resistant external finish.
      5. Tubing Connections: Stainless-steel couplings or flared joints with stainless-steel draw bolts.
      6. Reflector: Polished aluminum, 97 percent minimum reflectivity, with end caps. Shape to control radiation from tubing for uniform intensity at floor level with 100 percent cutoff above centerline of tubing. Provide for rotating reflector or heater around a horizontal axis for minimum 30-degree tilt from vertical.
         1. Reflector Extension Shields: Same material as reflectors, arranged for fixed connection to lower reflector lip and rigid support to provide 100 percent cutoff of direct radiation from tubing at angles greater than 30 degrees from vertical.
         2. Include hanger kit.
      7. Burner Safety Controls:
         1. Gas Control Valve: Single-stage, regulated redundant 24-VAC gas valve containing pilot solenoid valve, electric gas valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff all in one body.
         2. Blocked Vent Safety: Differential pressure switch in burner safety circuit to stop burner operation with high discharge or suction pressure.
         3. Control Panel Interlock: Stops burner if panel is open.
         4. Indicator Lights: Burner-on indicator light.
      8. Burner and Emitter Type: Gravity-vented power burner, with the following features:
         1. Emitter Tube: 4-inch-diameter, aluminized-steel tubing with sight glass for burner and pilot flame observation.
         2. Venting: Connector at exit end of emitter tubing for vent-pipe connection with rain cap for both].
         3. Burner/Ignition: Power gas burner with electronic spark and electronic flame safety.
         4. Burner/Ignition: Stainless-steel burner cup and head with balanced-rotor draft fan and spark ignition with electronic flame supervision.
         5. Combustion-Air Connection: Duct connection for combustion air to be drawn directly from outdoors by burner fan.
   2. CONTROLS

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NOTE TO SPECIFIER

Retain one of two paragraphs below or revise to suit selected equipment. Delete if thermostat is specified in Division 25 BAS sections."

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* + 1. Thermostat: Devices and wiring are specified in Section 250504 Building Automation System (BAS) General.
       1. Control Transformer: Integrally mounted.
    2. Thermostat: Single-stage, wall-mounting type with 50 to 90 deg F operating range and fan on switch.
       1. Control Transformer: Integrally mounted.

1. EXECUTION
   1. INSTALLATION
      1. Install and connect gas-fired radiant heaters and associated fuel and vent features and systems according to NFPA 54, applicable local codes and regulations, and manufacturer's written installation instructions.
      2. Suspended Units: Suspend from substrate using chain hanger kits and building attachments.
      3. Maintain manufacturers' recommended clearances to combustibles.
      4. Install piping adjacent to gas-fired radiant heaters to allow service and maintenance.
      5. Gas Piping: Comply Section 231123 - Facility Natural Gas Piping. Connect gas piping to gas train inlet; provide union with enough clearance for burner removal and service.
      6. Vent Connections: Comply with Section 235100 - Breechings, Chimneys, and Stacks.
      7. Electrical Connections: Comply with applicable requirements in Division 26 Sections.
         1. Install electrical devices furnished with heaters but not specified to be factory mounted.
      8. Adjust initial temperature set points.
      9. Adjust burner and other unit components for optimum heating performance and efficiency.
   2. FIELD QUALITY CONTROL
      1. Tests and Inspections: Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
   3. DEMONSTRATION
      1. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain boilers. Video training sessions. Refer to Division 1 Section "Demonstration and Training."

END OF SECTION

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