# Statement of Work

AH1 Gas-Fired Air Heater
Air Force Research Laboratory (AFRL/RQOE)
16 April 2026

## 1.0 INTRODUCTION AND SCOPE

This Statement of Work (SOW) defines the requirements for the procurement, delivery, commissioning, and support of a new gas-fired air heater system. The contractor shall provide a complete, fully functional system that meets the performance, design, and operational specifications outlined herein. The objective is to replace the existing air heater, which has reached its end of service life, to support critical research and development missions at the Air Force Research Laboratory (AFRL).

## 2.0 BACKGROUND

The AFRL's Propulsion Directorate (RQ) utilizes a high-pressure, high-temperature air delivery system to simulate the altitude and velocity conditions required for testing advanced propulsion systems for United States Air Force platforms. The existing gas-fired heater is an essential component of this system, providing heated air at precise temperatures and pressures. As the current heater has reached the end of its operational lifecycle, a replacement is necessary to ensure the continuity of the AFRL's vital research mission without interruption.

## 3.0 REQUIREMENTS

The contractor shall provide a gas-fired air heater system that meets the following minimum technical and performance requirements.

### 3.1 Performance Specifications

The air heater shall be capable of stable, continuous operation across the full range of conditions specified below:

- Process Air Flow Rate: 2.5 to 34.0 lbm/sec
- Process Air Inlet Temperature: 100°F (Nominal)
- Process Air Discharge Temperature Range: 250°F to 1250°F
- Discharge Temperature Tolerance: +4% / -0% of the setpoint
- Maximum Operating Pressure: 750 PSIG
- Design Pressure: 500 PSIG

- Maximum Continuous Operation Period: Up to 16 hours

### 3.2 Design and Construction

- System Package: The heater shall be delivered as a complete and integrated heater-burner package, including the integral forced draft burner, heating coils, heater trim, refractory, insulation, control systems, fuel train, and all necessary accessory components.
- Assembly and Installation: The system shall be delivered fully assembled and prepared for ground mounting. The design must facilitate straightforward connection to government-provided utilities and systems, including process air intake/discharge, plant compressed air, electrical power, natural gas, vent stacks, and control lines.
- Serviceability: The equipment layout and accessory installations shall be designed to permit clear and easy access for routine maintenance, inspection, and service activities.
- Operational Readiness: The heater must be capable of daily operation and must also be able to start and operate without damage or degradation after periods of inactivity lasting up to 30 days.

### 3.3 Environmental and Durability

- Outdoor Installation: The air heater shall be designed and constructed for permanent outdoor installation.
- Corrosion and Weather Protection: The system must include robust weather and corrosion protection to ensure a reliable service life of 25 years with minimal degradation from environmental exposure. Special consideration must be given to protecting all components from potential salt spray, as the installation site is near an active roadway.
- Extreme Temperature Operation: The heater and all its components shall be equipped for safe and stable operation during extreme outdoor temperature conditions. The contractor shall review historical weather data for the installation location for the past 30 years and ensure the provided equipment is capable of operating reliably at the recorded temperature extremes.

### 3.4 Safety and Compliance

- The heater design, construction, and operation shall comply with all relevant codes and standards, including the National Fire Protection Association (NFPA) 85, "Boiler and Combustion Systems Hazards Code."

## 4.0 DELIVERABLES

The contractor shall provide the following deliverables:

- Item 1: Gas-Fired Air Heater System: One (1) complete system meeting all requirements specified in Section 3.0.
- Item 2: Commissioning: On-site commissioning services to be performed after the heater is installed into the flow system by government personnel. Commissioning shall include system start-up, operational checks, and performance verification.
- Item 3: Training: On-site training for government operators and maintenance personnel. The training shall cover system operation, control, routine maintenance, and troubleshooting procedures.
- Item 4: Documentation: Comprehensive Operations and Maintenance (O&M) manuals, including all system drawings, schematics, parts lists, and vendor literature.
- Item 5: Warranty: A minimum one (1) year warranty on all parts and labor, commencing upon formal government acceptance of the system.

## 5.0 REFERENCE DOCUMENTS

For a complete and detailed listing of all requirements, features, and design condition assumptions, refer to Specification Section 23 80 20.10 10, "GAS-FIRED AIR HEATERS."