

1.0 Background

Kennedy Space Center (KSC) flight hardware processing and other critical facilities require uninterrupted cooling to support operations and protect sensitive equipment. Existing cooling assets are subject to launch damage, inclement weather, or are scheduled for maintenance or replacement. A portable, trailer-mounted chiller allows rapid deployment and minimal disruption to onsite operations and is required to ensure redundancy anywhere on the Spaceport with minimal loss of thermal control.

2.0 Scope of Work

The Contractor shall furnish one complete, electrically powered, air-cooled hydronic chiller system mounted on an aluminum DOT-rated step-deck trailer. The furnished system shall include all mechanical, electrical, and controls components required for direct interface with existing ~~Kennedy Space Center~~-KSC facility dual 6-inch chilled water and 480-volt electrical power connections.

The Contractor shall provide 480-volt, three-phase power cabling with overcurrent protection compatible with facility disconnects. The Contractor shall also furnish flexible 6-inch chilled water supply and return hoses equipped with ANSI-rated bolted flange hardware, gaskets, and associated connection hardware compatible with standard dual 6-inch carbon steel facility flanged interfaces. The Contractor shall furnish all required documentation and certifications, including equipment data sheets, trailer load-rating certifications, hose specifications, pump curves, electrical one-line diagrams, operations and maintenance manuals, and commissioning records. The Contractor shall deliver all auxiliary spare parts necessary to support normal operation.

The Contractor shall perform on-site manufacturer-authorized startup and performance verification and shall provide operational familiarization to NASA personnel. The Contractor shall also provide all associated schematics, procedures, and records required to establish operational readiness.

2.1 Contract Type, Delivery and Performance Period

Firm-Fixed-Price (FFP) contract. Period of Performance (POP) includes the delivery of a fully operational chiller, pump, and associated equipment (see 2.0 Scope of Work) to KSC on or before June 30, 2027.

3.0 Technical Requirements

3.1 Chiller

- a. Electrically powered, air-cooled hydronic chiller of 500 refrigeration ton or 1758-kilowatt cooling capacity, capable of a chilled water temperature differential between supply and return flows of 10°F to 14°F at design conditions.
- b. Three phase alternating current, 480-volt input.
- c. Two sets of 480-volt, 125-amp electrical cables, with each cable set being a minimum of at least 25 feet long in length.
- d. Helical variable-speed rotary screw compressors, with three fully independent cooling circuits.

- e. Integrated variable-speed fan motors with composite or other non-ferrous fan blades.
- f. Onboard two-way adjustable supply and return water temperature set point capability.
- g. Capable of continuous, year-round outdoor operation under all environmental conditions. All electrical enclosures, controls, and externally mounted motors shall meet a minimum ingress-protection rating of IP55 in accordance with IEC 60529, ensuring protection against dust ingress and water jets from any direction.
- h. The condenser coils shall be traditional tube-and-fin copper construction with anti-corrosion coatings and alloy brazed joints. Microchannel construction is acceptable in lieu of tube-and-fin construction, provided the condenser coils include a comprehensive anti-corrosion coating system suitable for a coastal marine environment. The condenser coil mounting rails shall be modified to provide adequate drainage to prevent the accumulation of corrosive, alkaline water resulting from exposure to offshore marine saltwater deposits and frequent rainfall.
- i. Integrated safety controls including high-pressure protection, freeze protection, phase monitoring, and emergency stop.
- j. Integrated vibration and acoustic dampening on condenser coils and compressors, as well as a compressor muffler.
- k. Operates with refrigerant R-134A, R-513A, or compatible ecologically friendly refrigerant.
- l. Six-inch diameter, flexible rubber/polymer water hoses at least 40 feet in length, bolted flanges, gaskets, and hardware upon delivery of chiller.

3.2 Trailer

- a. DOT-rated step-deck flatbed trailer, 45–55 feet in length sized accordingly to accommodate chiller and skid-mounted water pump together for transport.
- b. Aluminum construction for superior corrosion resistance and durability in a coastal [marine](#) environment.
- c. Minimum load capacity of 25 tons or greater.
- d. Trailer shall include proper DOT-approved load rating, tie-down anchors, leveling support, wheel chocks, and necessary equipment suitable for static placement.

3.3 Chilled Water Supply Pump

- a. 50 horsepower end-suction centrifugal water pump, with a 6” inlet and 5” or 6” discharge diameter. Horizontally mounted. Fixed speed motor operates on 230/460 volts, 56/112 amp, three phase alternating current. Delivering minimum flow rate of 1250 gallons per minute at 100 feet of [total dynamic head](#) with a minimum 60 feet of head at 3,550 revolutions per minute.
- b. Cast iron or stainless-steel housing, with an enclosed impeller constructed of cast iron or stainless steel.
- c. Chilled water pump shall be skid-mounted or integrated with the chiller with bypass flow capability. Pump shall include corrosion-inhibiting coating and isometric dampening mounts for vibration control.

3.4 Factory Startup & Familiarization

- a. The Contractor shall provide on-site manufacturer-led on-site startup, performance benchmarking, and operational familiarization training for NASA KSC personnel. The Contractor shall provide training covering system operation and maintenance and shall furnish associated schematics, operational procedures, and spare parts lists.

3.5 Mechanical Connection Hardware

- a. ANSI-rated bolt-on flange connections compatible with standard 6-inch carbon-steel KSC facility chilled-water supply and return interfaces.
- b. Complete bolt & gasket kits for all flanged joints and connections.
- c. Flexible 6-inch supply and return hoses sized to match existing system connections, 125 pounds per square inch pressure-rated for non-potable chilled-water service.

3.6 Electrical and Controls

- a. 480-volt power cables, connections, and overcurrent protection for chiller and water pump which are compatible with existing facility connections.

4.0 Deliverables (All items a-h listed below shall be provided digitally at product delivery)

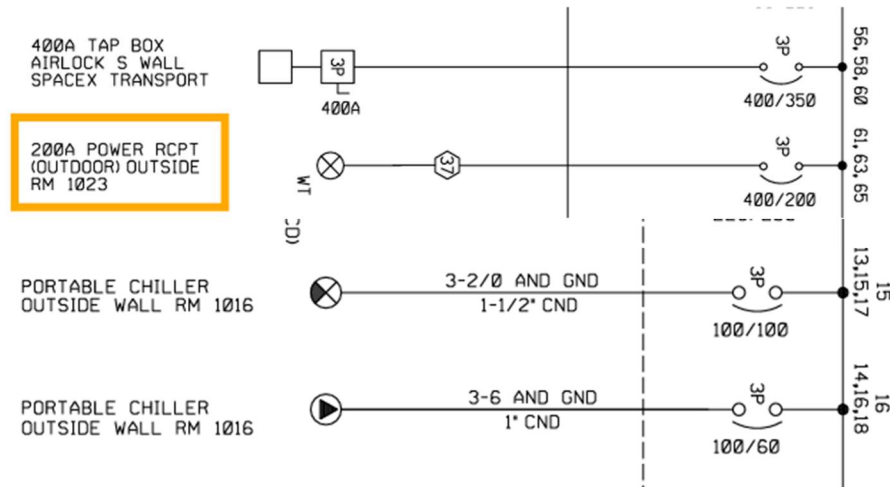
- a. Equipment submittals and certifications as follows: American Society of Heating, Refrigeration, & Air Conditioning Engineers for chiller, Department of Transportation for trailer, Hydraulic Institute or ANSI for water pump.
- b. Electrical one-line diagram for temporary power configuration.
- c. Startup testing and commissioning report.
- d. As-built routing sketches for mechanical and electrical connections.
- e. Operations & maintenance documentation.
- f. Warranty coverage documentation.
- g. Pressure testing certification on water hose assemblies & flanged connections.
- h. Equipment data sheets, trailer certifications, pump curves, electrical requirements, and hose specifications.

5.0 Other Requirements

- a. The unit shall be trailer-mounted and remain mobile as a temporary fixture; therefore, no modifications to KSC facilities are permitted or required, except those necessary for DOT or other applicable safety/code compliance.
- b. No BAS programming or integration is required, as the portable chiller is a standalone unit.
- c. Work shall be performed during first-shift hours, 7:00 AM to 3:30 PM, Monday through Friday, unless the Contractor receives Government approval to work outside normal business hours or days due to building operations or schedule requirements.
- d. The outage required to test the chiller shall be coordinated with the Government. The Contractor shall submit an outage request to the Government at least 15 business days in advance of the requested outage date and time.
- e. Delivery must be Free On Board (FOB) Destination to KSC.

6.0 Electrical schematics and connection at PHSF

- a. Electrical schematics for portable chiller connection at PHSF, back to breaker at the panel.



- b. Snippet from the legend for the particular terminal connection(s) pictured above.

- ⊗ * RECEPTACLE, 480V, 60HZ, 3PH, 4W, 3P
 - BCD = SWITCH INTERLOCKED, CLASS 1, DIV 1, GROUPS B, C, D.
 - WP = WEATHERPROOF
- ⊗_{WT} RECEPTACLE, WEATHERTIGHT, 480V, 60A, 60Hz, 3PH, 4W, 3P
- ⊗_{WT} RECEPTACLE, WEATHERTIGHT, 480V, 100A, 60Hz, 3PH, 4W, 3P