

Government Response to RFI Set #3 – Amendment 0004

42) Contractor Question: Refer to SOW para 2.6, RFI questions 3, 23, 26, 30, etc. It is clear that this is not a design-build project and as such, the design should be complete. In our opinion and those of some of our subs and vendors, there are parts of the SOW and RFI answers that do not provide enough information to provide a complete and competitive price. Regarding electrical, clear information regarding the new units' minimum power needs and what power is available in the existing switchboards to meet those needs should be provided or an allowance stated to be carried for conformity of bids.

Government Response: The design assumptions are based on the contractor providing 3 – BP-5000 desiccant air dryers. The manufacturer has indicated that each air dryer consists of a 30HP motor load and a 130kW electric heater load. The manufacturer's data should be used to size the final branch circuit demand amps for conductor overload/short circuit protection sizing. The feeder from the station service was determined based on the assumptions per the BP-5000 air dryer data gathered online. See the attached "one line" drawing for the conceptual electrical feed design. The calculations are as follows:

Feeder Calculation: (Ref. NEC Para. 430.24)

Motor Load: 30HP or 40 FLA (X 3 units) → (40 X 1.25) + (40 X 2) = 130A

Heater: 130 kW or 156 FLA (X 3 units) → 156 X 1.25 X 3 = 585A

Total Feeder Amps → 130 + 585 = 715A

Feeder Short Circuit Protection: (Ref. NEC Art. 430)

Motor Load: (40 X 2.5) + (40 X 2.0) = 180 A.

Heater: 585 A. (See above.)

Total SC Amps: 180 + 585 = 765 A. (Based on Thermal/Magnetic Circuit Breaker.)

See accompanying sketch for assumed wiring diagram.

Summary:

The above calculation is for conceptual purposes based on assumptions as indicated above. The contractor shall be responsible for all feeder calculations and providing all hardware, wiring labor, etc. to provide a complete and usable air drying system to meet the requirements of this contract. If an alternative to the system indicated above is provided, the contractor shall be responsible to submit feeder calculations and design documentation for government approval. Existing equipment and capacities have been provided in previous RFI submittals.

EXISTING STATION SERVICE SWITCHBOARD

800A3P
(EXIST'G)

3-500kCMIL, 1-#1/0G IN EA OF 2-4" C

400AF, 3-P,
CIRCUIT BKR
TYP OF 3

NOTES:

- 1 PROVIDE FEEDER CONDUCTORS, CONDUIT, ETC. AS INDICATED.
- 2 CONTRACTOR TO SIZE AND PROVIDE BRANCH CIRCUIT CONDUCTORS, CONDUIT, ETC., AS REQ'D.
- 3 PROVIDE SWITCHBOARD AS INDICATED.
- 4 PROVIDE CKT/BKRS AS INDICATED. PROVIDE TRIP MODULES AND SETTINGS AS RECOMMENDED BY MFR.
- 5 PROVIDE A TYPED PANEL SCHEDULE.
- 6 PROVIDE ENGRAVED LABELS INDICATING SWBD DESIGNATION, AND SOURCE.
- 7 PROVIDE ENGRAVED LABEL(S) ADJACENT TO EXIST'G 800A C/B INDICATING LOAD SERVED.

480VAC, 800A
3-PH, 3-W (+G)
SWITCHBOARD
MLO

BP-5000

DRIER #1

BP-5000

DRIER #2

BP-5000

DRIER #3

AIR DRIER ELECTRICAL ONELINE (CONCEPT)

43) Contractor Question: Regarding the working platforms, if there is not adequate space to provide such, it is not possible to adequately price. Please provide a design or state an allowance to be carried for conformity of bids. Will specifications be provided for piping and electrical materials prior to bid, or is the intent to provide as part of the submittal requirements for the design drawings and development of a submittal register.

Government Response: The requirement for work platforms paragraph 2.1.26 was to establish a safe means for personnel to perform routine maintenance (e.g. loading the dryers with desiccant) without exposing personnel to a fall hazard while handling tools or 50 lb. bags of desiccant. As the equipment manufacturer and equipment model number was not specified by the Government, providing a design for platforms for unidentified equipment is not practical. The Government requires that either the contractor or the equipment supplier provide an OSHA 1910, Subpart D compliant solution to allow personnel safe access to a position in which known maintenance tasks can be performed. The proposed solution should also consider the ergonomics of the maintenance tasks, as the solution shall not expose personnel to back and other injuries that would be induced by requiring a worker to support a load extended from their body (e.g. trying to support a 50 lb. bag of desiccant at arm length while leaning over an obstruction). If fixed solutions are not feasible, the contractor may consider stable repositionable options (e.g. rolling stairs or platforms with means to prevent inadvertent motion). While there are many different options to access working platforms, the Government's requirement is to safely service the equipment in compliance with OSHA.