

**Upstate Central Chilled Water Plant
Chiller #3 Replacement
University of South Carolina - Upstate**

SC State Project # H34-9545-JM

Addendum No. 2

DATE: December 3, 2015
FROM: PERITUS ENGINEERS & ASSOCIATES, INC.
TO: ALL BIDDERS

The following items add to, modify, clarify, or otherwise alter the Drawings and/or specifications and will become a part of the Contract Documents. Where a portion of the Drawings and/or specifications is added to, modified, clarified, or otherwise altered, the portion not so affected shall remain. Bidder shall include all effects that these items may have on his proposal.

Acknowledge receipt of this addendum in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

Drawings

1. Drawing E-1, Renovation Note 1 "New Chiller #3", first sentence, delete "three #500 MCM THHN copper conductors with one #2 AWG copper green insulated ground wire" and replace with "six #4/0 AWG THHN copper conductors with one #2 AWG copper green insulated ground wire".
2. Drawing E-1, Detail 3, Existing Switchboard Elevation, ADD the following note "It is required to provide double-barrel lugs on the load-side of the new 500 amp rated circuit breaker that will accept two #4/0 AWG copper conductors per phase.
3. See Mechanical Piping bulletin SKMP-1 for clouded revision to Drawing MP-1 adding pressure relief vent piping required for new chiller CH-3.

Questions from bidders:

Q: On the electrical drawing E1/1, it requests the new copper size to be #500 THHN which is only rated at 430 at best (90C) and if you look at detail 3/same sheet it asks to provide a 500Amp breaker for the new feeder wires. The new wire is under sized for the breaker requested and larger wire or parallel conduits will add cost to make it right. Can you let me know which direction to go?

A: Refer to Drawing Addendum 2 (this addendum, listed above) Notes #1 and #2 which impacts the nature of this question with respect to wire sizing. In addition, the question is out of context with the National Electrical Code (NEC). Article 440 of the NEC allows the

rating of the overcurrent protection for air-conditioning and refrigerant equipment to be as high as 175% of the full load current of the equipment (see Article 440.22). In this case, the minimum circuit amps published by the manufacturer for the chiller is 351 amperes, which is well within the rating of the conductors specified. If you multiply 351 by 1.75 (%175) you get approximately 600 amperes, which is the maximum overcurrent protection rating that can be applied to the chiller according to the NEC, and as published by the chiller manufacturer (see the equipment schedule on the Mechanical drawings for these ratings). The circuit breaker we specified was a 500 ampere rated breaker. In addition, the new breaker was specified to have long-time, short-time, and instantaneous electronic trip settings to allow for high motor starting currents (contractor must procure the services of Eaton/Cutler-Hammer to determine the trip settings of the circuit breaker as indicated on drawing E-1).

END OF ADDENDUM NO. 2

