I. Internal self-diagnostics.

J. Speed control shall be from a 4-20mA, 0-10vdc, 2-10vdc.

K. Enclosures shall be NEMA-1 for indoor applications and NEMA 3R for outdoor applications.

L. Acceptable manufacturers and models:

1. ABB ACH550.
2. Toshiba Q9 Series

M. Integral bypass switch that allows operation of the motor via line power in the event of VFD failure.

2.02 Warranty

A. 36 months from the date of certified start up. Include all parts, labor, travel time and expenses.

B. Local factory certified technicians for 24 hours, 7-day a week service. Throughout the warranty service period, response within 24 hours of initial contact for service.

C. Guaranteed spare parts availability to the University for a minimum of fifteen (15) years from date of purchase. Price escalation for spare parts not to exceed 10% per year over the fifteen (15) year duration

2.03 Training

A. On-site 52 -0 0 TJ 0 T0o69o 710.1(nc)-Í·æRž9 J3rä63ä¦S3i F‡.J3“## ·ç2Ag ”Ã‘ :3d

PART 3: EXECUTION

3.01 Design Requirements

A. The 50% Contract Document review submission shall include specifications and details for VFD's.

B. Statement of deviations from standards. Deviations approved by the University.

C. Incorporate the University's standard VFD documents and details into project contract documents.

D. Show VFD locations on mechanical plans. Ensure adequate mounting space and floor area including service access. VFD preferred location is adjacent to and within the same room as equipment served.

3.02 Coordination

A. All design work shall be coordinated between electrical, mechanical and the University.

B. Coordinate the following VFD options with the University:

1. External bypass switch to operate equipment while VFD is inoperative or being maintained.
2. Communications interface with building and temperature controls.
3. Input line reactors for harmonic suppression.
4. Output line reactors for motor protection.
5. 6, 12 or 18 pulse shifting transformer or Active Harmonic filtering (AHF) to minimize total harmonic distortion.
6. Removable VFD keypad with LCD and memory storage.
7. External Three contactor DRIVE/OFF/BYPASS/TEST SWITCH that allows operation of the motor via line power in the event of VFD failure.

END OF STANDARD