NOTE: THIS DESIGN GUIDELINE IS IN THE PROCESS OF BEING REVISED

VARIABLE SPEED DRIVES

General

Refer to Section 15960 for a complete list of electrical, mechanical and installation requirements for variable speed drives (VSD).

Before adding a VSD, determine the total harmonics generating load on the unit substation transformer. The harmonics generating load shall not exceed 10 percent of the transformer base rating without approval from the University Utilities Department through the University Project Coordinator.

Before adding a VSD, evaluate the possible effects of the VSD on power factor correcting capacitors or harmonic sensitive equipment on the same bus. Avoid installing a VSD on the same bus with capacitors or sensitive equipment.

Before adding a VSD, provide calculations per IEEE Standard 519 showing the current and voltage total harmonic distortion (THD) that will be reflected into the existing University power system. Contact the University Utilities Department through the University Project Coordinator for the required power system data. The VSD shall limit the THD to the values noted below when operating at any load from zero to 100 percent.

VSD input voltage waveform: less than 3 percent THD

VSD input current waveform: less than 100 percent THD

After startup of the VSD, provide at no additional cost to the University any additional isolation transformers, reactors or filters required to reduce the actual THD to the calculated THD.

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