GENERAL

This guideline is intended to provide basic installation, operation and safety procedures to be followed when an alternate source of electricity is connected to building or other electrical distribution systems. For this guideline, an alternate source is defined as;

A. A system producing electricity interconnected with University building's electrical systems or MU's electrical distribution grid. Systems to include, but not limited to, would be Solar Photo Voltaic, Wind Turbine, Backup Generators, Fuel Cells, etc.
B. Battery storage systems intended for the storage and discharging of electricity into an electrical power distribution system.

Systems not included are Uninterruptible Power Supplies, etc.

DESIGN GUIDELINES

These requirements are necessary to prevent property damages, personnel injuries or deaths from these systems back feeding into other systems when the normal power feed is not available.

System installation must comply with one of the following:

A. Installed **standalone** without any electrical power connection to building or other distribution systems.
    1. All electricity generated is typically stored and/or used locally.
    2. No extra metering required.

B. Installed with a **transfer switch** to prevent back feeding into building or distribution systems.
    1. Typical installation with emergency generator backup systems.
    2. Transfer switch is not designed to continuously operate in parallel with normal electric source.
    3. No extra metering required.

C. Installed **grid connected** in a manner that the system can supply electricity in addition and parallel to normal electrical feeds.
    1. System must disconnect itself from the building or distribution system upon the loss of normal power source.
    2. The system shall be tested annually to verify it will disconnect or shut down upon loss of normal power source.
    3. Design must include an analysis of the electrical system to ensure proper ratings for all equipment.
    4. MU: System must have a bi-directional meter providing use and generation information to Campus Facilities – Energy Management. Other metering may be necessary for the installation to provide information to other entities.

5. MU: System may be used for paralleling and electrical peak demand reduction by electricity supplier. Energy supplier will monitor and control the installation if used for this purpose.

Alternate energy source systems shall be designed and installed with proper labeling, signage and disconnect switchgear for notification about the energy source and allow proper lock out - tag out safety procedures.

All installations shall comply with all fire codes and regulations governing the location.

Docking stations shall be installed to facilitate maintenance and testing of backup generators.

Typical designs for building life safety are individual battery powered lighting fixtures. Central battery systems or emergency generation may be used for life safety with approval of the campus project manager. PM may consult University Engineer.

All installations shall be reviewed and/or designed by Campus personnel.

COMMISSIONING

System will be placed in service only after verification of meeting all design/installation guidelines.