SANDIA NATIONAL LABS ENERGY STORAGE TEST PAD (ESTP)

Albuquerque, NM

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Why Energy Storage Test Pad

- Utility scale energy storage testing facilities are uncommon and a very expense asset
- Large energy systems need to be evaluated through various tests (IEEE1547, power quality, etc.) to insure adequate performance and compliance
- Test leading edge technology in a safe controlled lab environment

Funding

- **$1.1 M for design, procurement and construction.**

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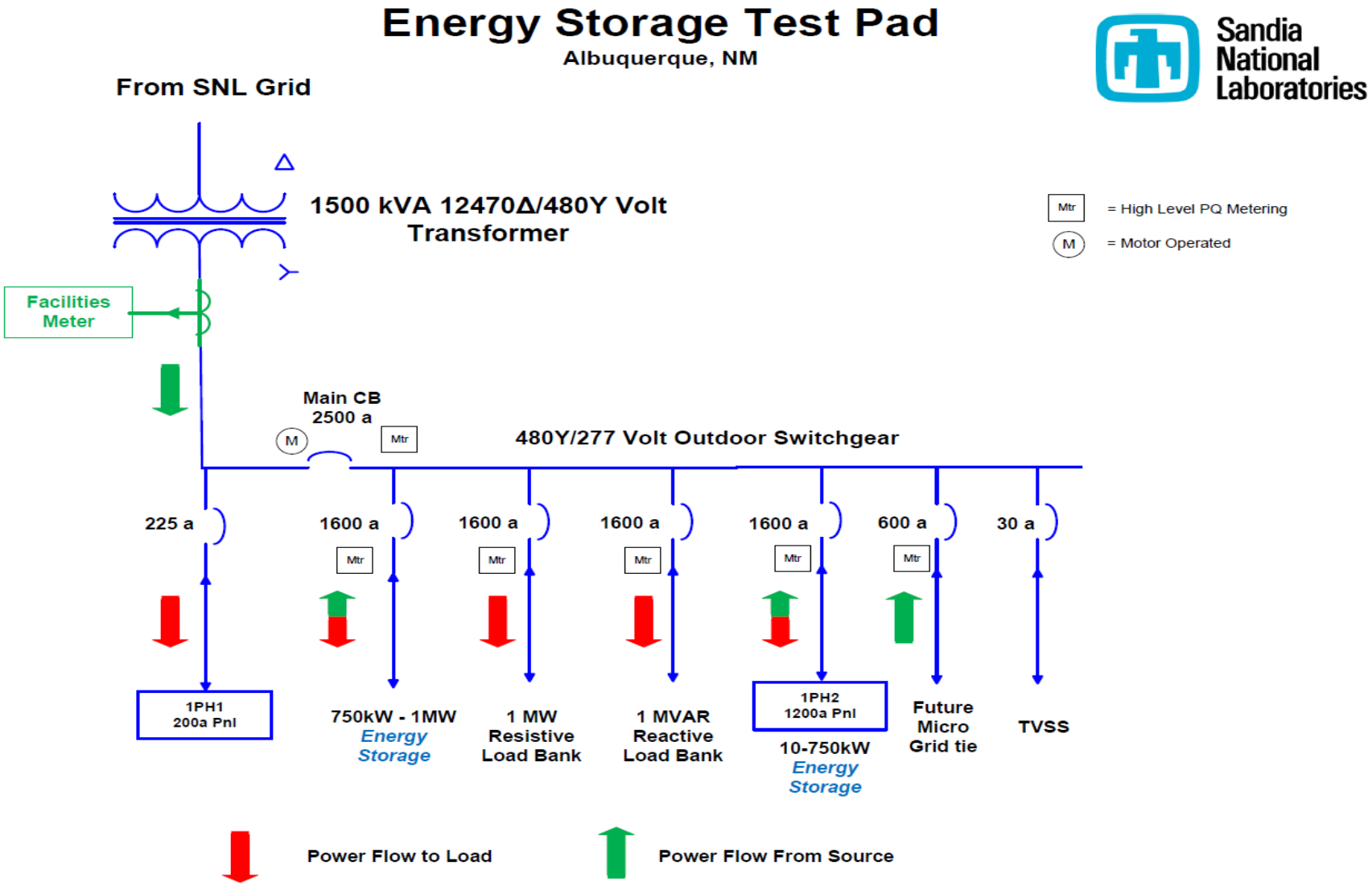
Benefits of Energy Storage Test Pad At SNL Distributed Energy Test Lab (DETL)

- SNL is one of the leading national labs in energy storage
- Enable vendors of large scale battery systems (≤1MW AC) and electrical utilities to obtain a non-bias performance evaluation whether UL/NRTL certified or not
- Utility and islanded tests can be performed
- Use of sub-cycle metering for transient analysis
- Develop improved energy storage models using gathered field measured data
- Enhance control algorithms

DETL / ESTP Aerial View

ESTP One-Line



Construction Phase

Time Line

- June, 2010 → Funding received, Project scope developed
- June, 2010 – August, 2010 → Develop energy storage test pad design, equipment specifications and order equipment
- August 2010 - October 2010 → Clear designated site of electrical equipment and debris, adjust property fence, install underground conduits, install conduits for future DETL microgrid interconnection, install concrete pads for equipment, set electrical equipment on concrete pads, install load bank, install fiber communication and resurface area
- October 2010 – January 2011 → Install and terminate conductors to electrical equipment, develop control system and commission test pad

Summary/Conclusions

- SNL received funding for developing a large scale energy storage test pad
- ESTP will be used to evaluate performance and compliance of large scale energy systems while interconnected to the electric utility or islanded
- Completion of project is scheduled for the end of January ‘11
- Future enhancement of the testing facility include PV/Wind emulator, capacitor load bank and interconnection to the existing 480V AC DETL microgrid

Future Enhancement

- Connect the ESTP to the DETL existing 480V AC microgrid
- Increase load bank capability by adding a remotely operated and adjustable capacitor load bank for testing complex loads and evaluating anti-islanding algorithms
- Purchase and install (≤ 1MW) PV/Wind emulator

Need More info

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Sandia Labs Energy Storage Website:

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