Electrical Utility Interface Protections and Challenges

EE HPC WG SC18 Workshop
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Electrical Utility

• What is the main purpose of the electrical utility?
• What level of service is the electrical utility mandated to provide?

Things To Consider

• Aging infrastructure
• Weather and other impacts
• Evolving technology
• Variable loads
Protections

• Dual Conversion UPS - Batteries
• Rotary UPS
• Diesel Rotary UPS
• SPD – Surge Protection Devices (formerly referred to as Transient Voltage Surge Suppression or TVSS)

Things to Consider

• Maintenance of systems
• Proper level of protection – risk assessment
Challenges

• Step losses – 480 / 208 – DC?
• 480V 3 Phase systems – are they really 3 Phase?
• Outages vs “bumps” - what is the utility required to report?
• Maintenance – internal and external
• Communication – relationship between facility and utility provider

Things to consider

• Transformer selection
• Distribution gear selection
Monitoring

• What is the electrical utility obligated to tell you?
• Important to monitor at all levels when determining where a problem exists – internal or external
• Avoid the “finger pointing”
• Protection from the computing vendor “blame game”
• Breaker coordination study – are you current?
• Arc flash – very important to understand your utility interface
Questions?