Contractors Breakfast

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Introduction

- Welcome from the Engineering Manager
- Where to find information
  - https://www.yvea.com/construction-service-guidelines
  - New Construction/Change of Service Form
    - Easement Document and proof of ownership
  - Joint Use Application
  - Electric Service Requirements Manual
  - Maximum Available Fault Current Table
- Generator Interconnection Documentation
  - https://www.yvea.com/renewable-energy-interconnection
- Backup Generator Program
  - https://www.yvea.com/standby-generator-program
- Notable Items on the horizon for 2019
  - Engineering Design Fee's

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Primary Contacts

- Emma Mortenson-Engineering Assistant
  - Primary Contact for New Construction/Change of Service
- Benjamin Hoffner-Engineering Manager
- Bill Barva-Engineer
- Larry Ball-Field Services Supervisor
- Nicole Rietz-Right of Way Agent
- John Cromer-Operations Manager
- Sanatam Khalsa-Colorado 811

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Engineering

- **New Construction/Change of Service Form**
  - Ownership documentation is required as part of the New Construction Form submittal
  - Standard underground installations will be meter pedestals
  - Any other installation will require prior YVEA approval
    - You cannot request a meter socket without submitting this form first.
- **Installation Guide Drawings *(See Handout)***
- **Member Installed Trench & Service Conduits *(See Handout)***
  - Transformer and pedestal stubouts (See Handout)
  - These installations require prior YVEA approval
- **Project Timelines (See Handout)**
- **Conduit & Riser Brackets**
  - Residential: Field Rep to place first bracket on pole for member to stub up
  - Commercial: Field Rep to place lath to stub up to (Single phase only)
  - Commercial Three Phase: Field Rep to put the first stub up

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Engineering

- **Conduit Requirements & Trench Inspections**
  - Commercial Inspections must be scheduled with the County
  - Residential Inspections are done by YVEA, call Emma Mortenson for scheduling *(See Handout)*
    - Standard installation is meter pedestals this inspection will only be performed if prior approval is granted by YVEA
    - New depth requirement 36” *(See Handout)*
  - Conduit Markers and stubs
- **Meter Base Issuance & Pickup**
  - New Construction/Change of Service Form submitted and prior approval is required by YVEA
  - 200amp call Emma Mortenson for invoicing
  - 320amp or higher needs approval
  - Do not cover meter bases
- **CT Cabinet Guidelines**
  - See Handout

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Commercial Load Calculations/Motor Load Forms

- Commercial Load Form is required for all commercial installations
- Motor Load Form required for any 10hp or greater (both single-and three-phase)
- Why does YVEA need this data?
  - Provides information on expected electrical load (heaters, air conditioning, roof tape, hot tubs, etc.)
  - Consolidates information onto a single form; however, one-lines/load calcs are required as part of your submittal
  - Assists YVEA Engineering in better sizing commercial transformers
  - Minimizes system losses
  - Keeps construction costs down due to oversized transformers
  - Prevents safety issues with excessive fault current with oversized transformers, burnt transformers/service wires for undersized transformers
  - Prevents power quality issues (voltage, drop, flicker) from affecting the member or other members on the system

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MOTOR 1

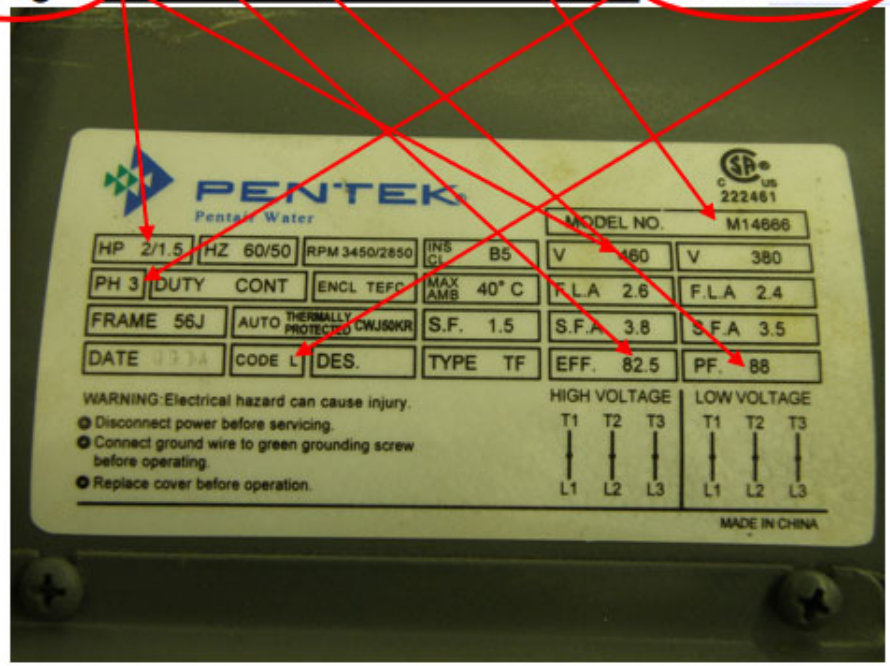
Manufacturer & Model: _____

Size (HP): _____

Power Factor at Full Load: _____

Efficiency at Full Load: _____ kVA Code: _____

Voltage: _____ # of Phases: _____



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Motor Start & Frequency of Use Information

Three Phase Converter ☐ Rated Amps: _____

Start: Across-the-line: ☐ Soft Start: ☐ % Voltage at Start: _____

Variable Frequency (or Speed) Drive: ☐

Frequency of Starts: Once Weekly or Fewer: ☐ Daily: ☐ # of times per day: _

Variable Frequency Drives are required to be IEEE-519 Compliant

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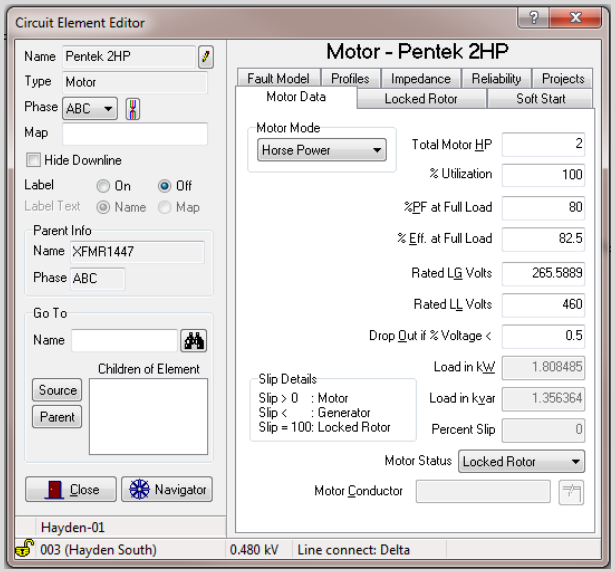
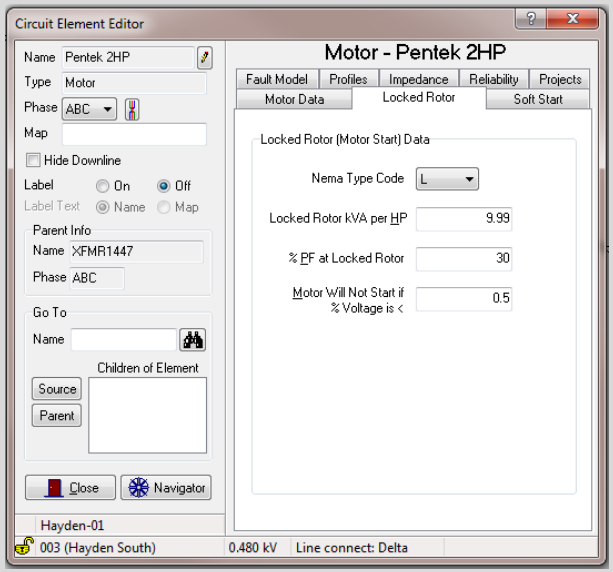
Motor Load Modelling

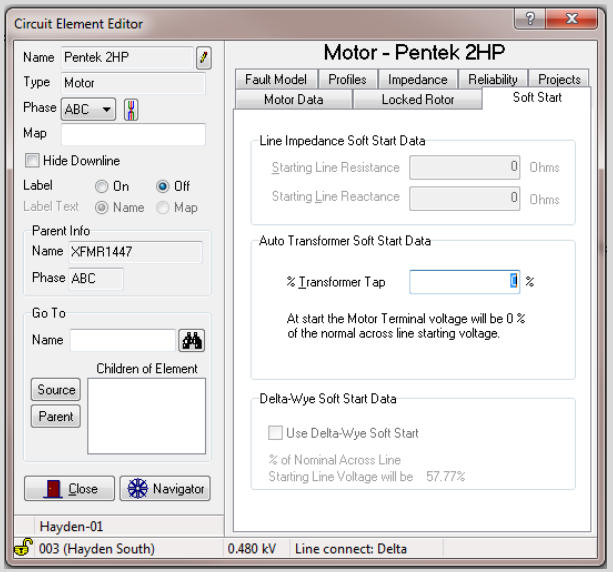
Motor Data



Locked Rotor



Soft Start



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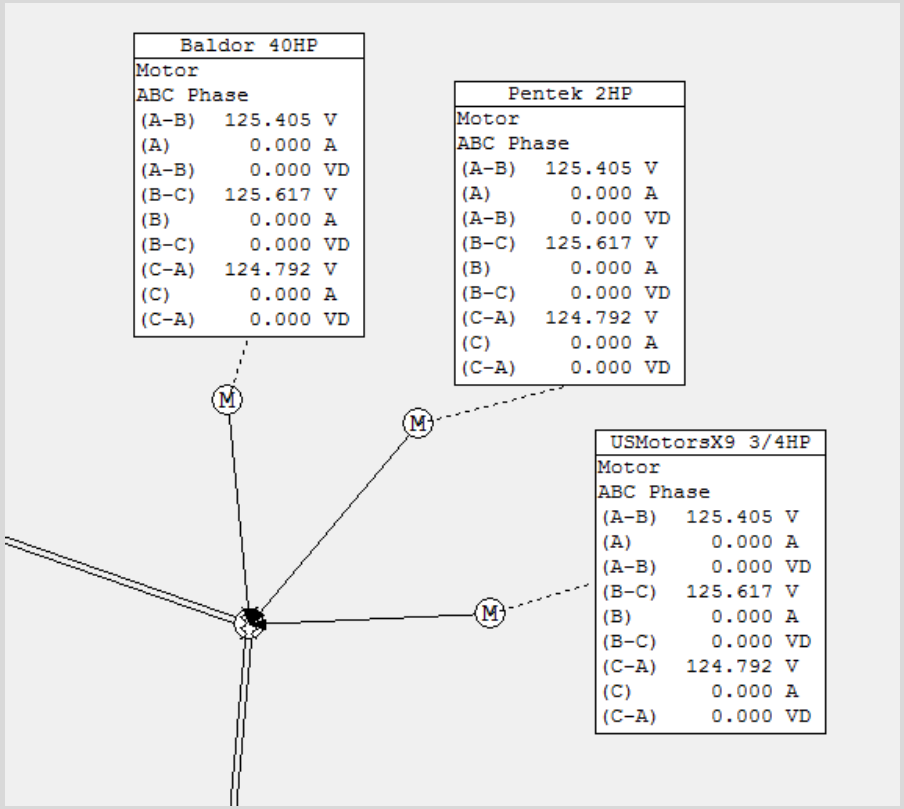
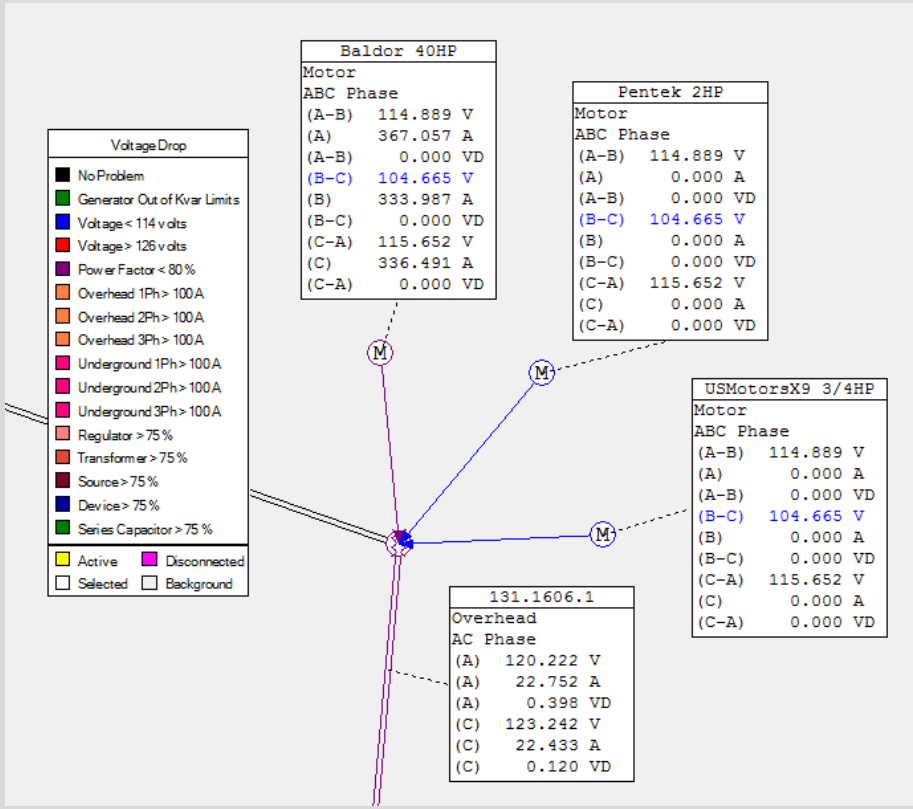
Motor Analysis-Voltage Drop

Baseline-Motors Off



Worst Case-Largest Motor Locked Rotor



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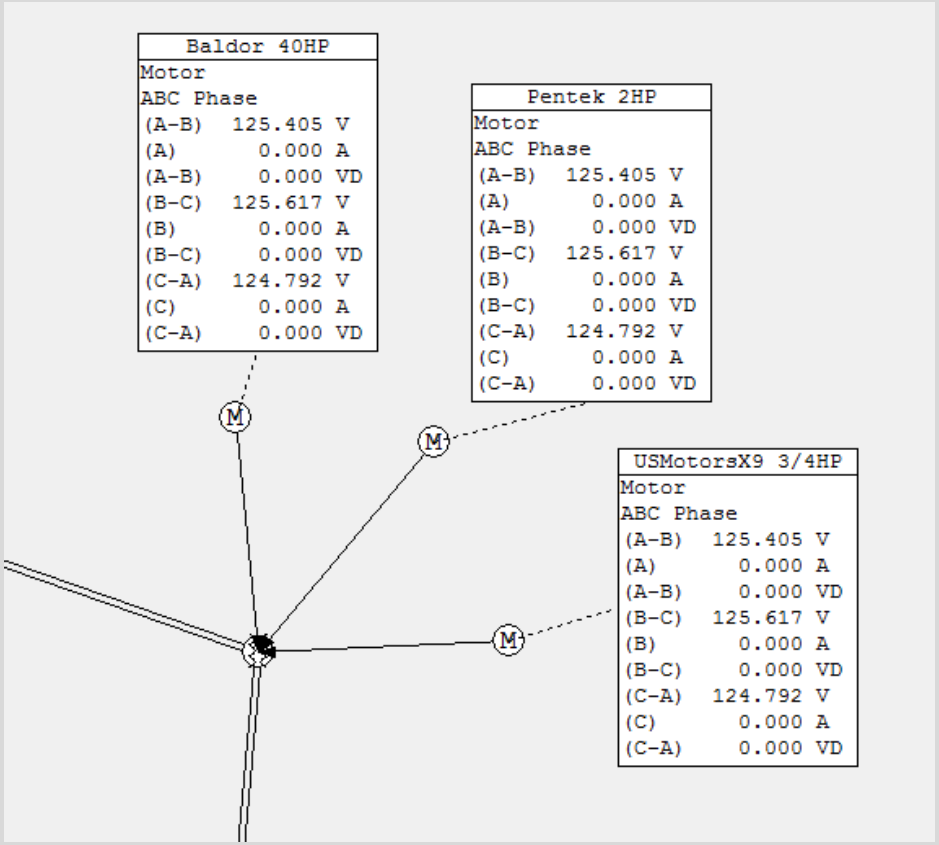
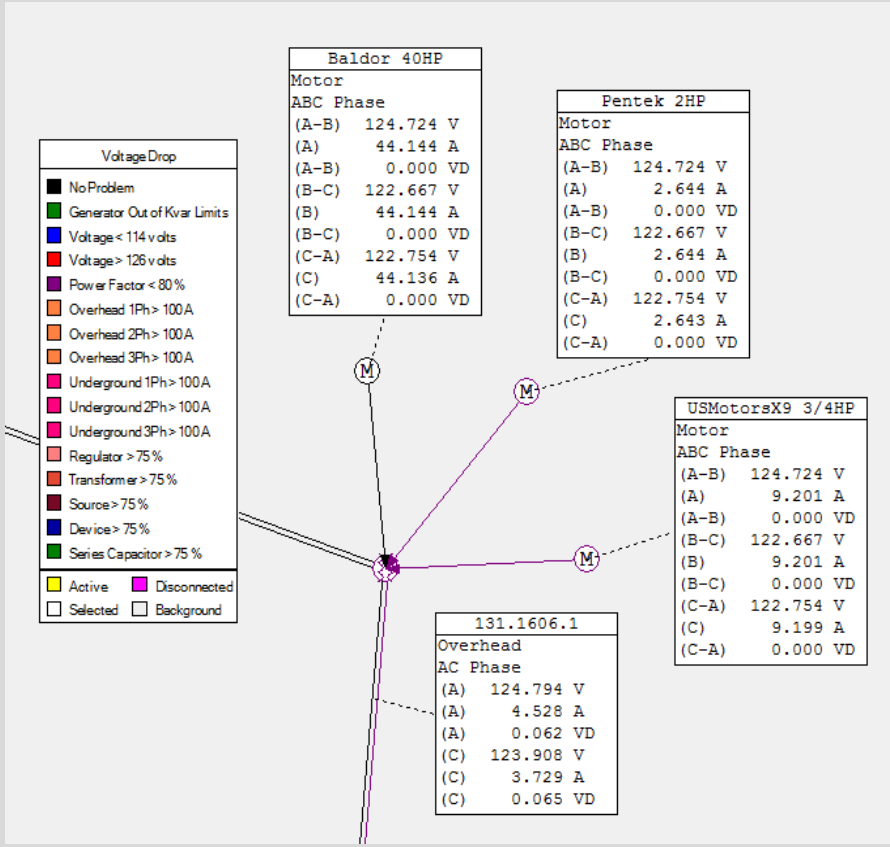
Motor Analysis-Voltage Drop (continued)

Baseline-Motors Off



All Motors Running



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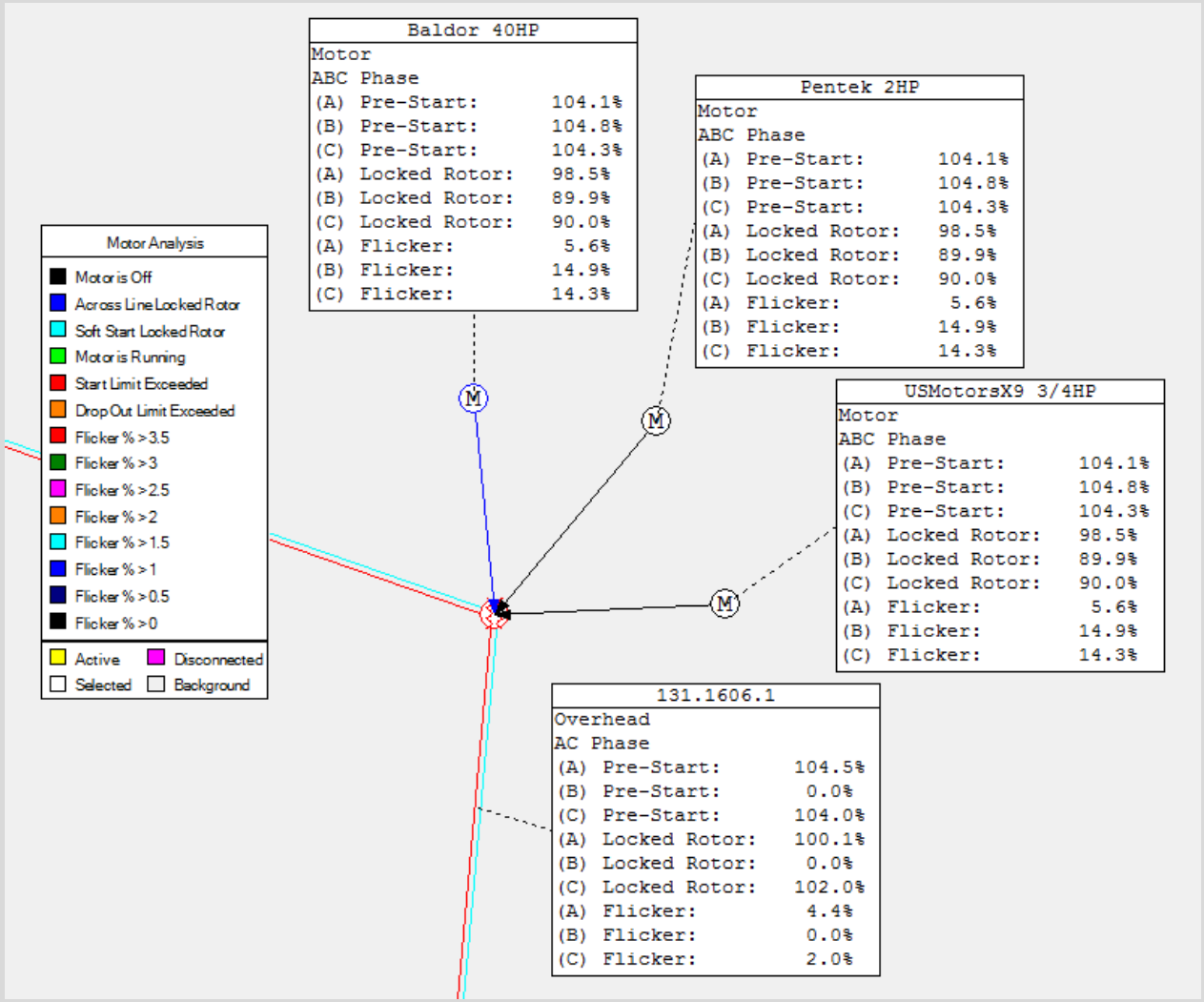
Motor Analysis-Flicker

Flicker-Largest Motor Locked-Rotor Start



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Requests for Fault Current Data

- Standard Fault Current Data for NEC requirements available online at www.yvea.com
- Notes: 1. Maximum fault current calculations use the “infinite bus” method, with impedances determined by the mean value of YVEA equipment inventory. According to the State of Colorado electrical inspectors, this value may be used in satisfying the criteria of NEC 110.24. This value may also be used to determine a conservative AIC rating for a breaker panel (provide that the next higher transformer size is used). YVEA does not recommend or condone using this value for any other electrical purpose, including arc flash analysis. Injury to personnel, including death, and damage to equipment may result.
- Data on the website for standard bank configurations
- Fault Current for non-standard configurations may be requested through YVEA Engineering

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Requests for Fault Current Data (continued)

- Fault current data used for arc flash analysis requires a fault current study by YVEA
- Please note that fault current may vary depending on conditions of the system, which is subject to change with system improvements and equipment replacement. YVEA provides fault current calculations as a courtesy to its members and these calculations are valid for the system that existed at the time of analysis. Because of the potential for the fault current to change, YVEA does not assume any responsibility for events resulting for the use of this analysis by the member or any agent of the member.

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Distributed Generation Interconnection Application Procedure

- New Distributed Generation Interconnection Policy and Forms can be found on www.yvea.com
- Fill out Interconnection Application and return to Emma Mortenson to begin process
- Documents to be submitted to YVEA separately from County approval process and preferably before you begin county process
- Fill out Application with information about the location, components of the system, system one-line, and any other relevant documents
- Once YVEA Engineering approval is granted - begin construction
- Once construction is complete, submit Interconnection Agreement and contact YVEA Engineering for system inspection/test/meter exchange
- Net metering will begin once the test is completed and meter exchanged
- YVEA will be reviewing and integrating the changes made to IEEE 1547 (2018) in the 2019 year and the policy may change due to this new standard.

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Backup Generator's

- YVEA Backup Generator Program
  - Information about the program can be found on https://www.yvea.com/standby-generator-program
  - Must submit form on website
  - Members can purchase a Briggs & Stratton standby generator for 50% down with the remaining 50% paid monthly as part of the members power bill from YVEA
  - Generators will be sold and installed by YVEA
- Member Installed Backup Generators
  - Members requesting to install their own backup generator must install a UL Listed transfer switch installed in accordance with the NEC.
    - YVEA requires a break-before-make mechanically interlocked transfer switch
  - Installations must be inspected by the appropriate county Electrical Inspector
  - Member must provide YVEA with a copy of the electrical permit and inspection and notify YVEA of the generator size

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Operations

- Scheduling Disconnects/Reconnects
  - Two week advanced notice required
  - Exceptions will be made for emergencies
  - If a service has been disconnected for more than a year you will need to get it inspected by the State/County electrical inspector prior to reconnection
- Pulling Meters/Commercial Disconnects
  - YVEA must perform all commercial disconnects
  - Cutting the meter seal without notification is considered tampering and is subject to a $140.00 meter tampering fee
- Disconnecting a Service with AMI
  - YVEA has the ability to deenergize 2S-SD meters when working past the main breaker upon request
  - If working on the main breaker and the electrician requires a visible disconnect they must schedule a disconnect

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Operations

- Safety/Opening Transformers, Dig-ins, etc.
  - Only YVEA is allowed to open transformers, cubicles, YVEA side of pedestal, and secondary pedestals
  - Locates required for any digging around YVEA equipment require a minimum of a 15 foot radius
  - All dig ins contact 811, and then YVEA dispatch immediately 970-871-2283 or 970-824-1483 regardless of fault
    - Be prepared to provide all locate ticket information
    - A full investigation will be conducted the responsible parties will be invoice appropriately
- Scheduling
  - Charge for return visits is $150.00
    - Return visits consist of any work that does not meet YVEA specifications and/or site readiness
  - Standard minimum 2 week rolling schedule
    - No same day scheduling unless emergency
    - Outages take priority and schedule may change
    - YVEA will take into consideration members project needs

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YVEA Warehouse Procedures

- **WAREHOUSE HOURS**: 8:00AM-3:30PM.
  - Closed for lunch from 12:00PM-12:30PM daily
- When access is needed to the warehouse/yard, call warehouse personnel at 970-819-0744 (Steamboat) or 970-326-6600 (Craig).
  - One (1) hour advance notice is expected. At no time should any one show up at the warehouse or its yard without prior arrangements made
  - Any materials that are not used or needed will be returned to YVEA

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Colorado 811

- Background
- Safety Commission
  - Will review complaints of alleged violations and order appropriate remedial action/penalties.
  - Join meetings by teleconference or web
    - Thursday April 11, 2019
    - Online at www.Colorado.gov/pacific/ops/UDPSafetyCommission
- Transition Time Line
- Member Responsibilities
  - Positive Response
  - Marking Standards
  - New Underground Facilities

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Colorado 811

- Excavator Responsibilities
  - Maintain adequate and accurate documentation
  - Non-destructive means in the tolerant zone
  - Expose facilities and visually observe safe crossing for trenchless excavation when requested
  - Locate Marks valid as long as clearly visible for no more than 30 calendar days.
- Excavator Ticket Attachment – If excavation cannot be adequately described
  - White Line
  - Electronic delineation
  - Schedule a meeting
- Excavator Re-notification
  - Positive Response Re-notification

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General Discussion & Questions

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