**System to be simulated on:**

Bellhaven - DEC

**Notes:**

* Reference the EPRI OpenDSS manual for syntax to initiate time series (pg. 146-160) and fault analysis (pg. 26) and the OpenDSS FaultStudy Mode document.
* Also reference EPRI Circuit 24 timeseries example circuit for MATLAB and openDSS setup. Examples can be found by pulling the EPRI repository as well as the GridPV toolbox.

**Questions/Instructions:**

1. **Time-series OpenDSS Device control simulation**
   1. Compile the system and run a 24hour simulation using the historical 6/1/2014 loadshape at a 1minute and 5second interval.
      1. Show Substation Real Power Consumption.
      2. LTC P.U. Phase Voltage across substation windings,
      3. LTC tap position vs. time.
   2. Place V, I &P,Q monitors at three-phase nodes (monitor modes 0 & 1). Re-run 24hour simulation and complete the following:
      1. Use the post-analysis algorithm that will organize data into structs by node distance from substation.
      2. Find point in time when voltage headroom halfway down the feeder is minimum (or the closest to 1.04PU). Then plot the Phase Voltages in P.U. vs. distance away from substation.
2. **Time-series MATLAB Device control simulation**
   1. Create a loop that will increment one time-step (number=) and initiate simulation for time-step duration. Find the following for each interval:
      1. Pull all single-phase:
         1. Node voltages
         2. Line Currents
         3. Line P,Q
      2. Format data into a structure so each line/bus will have a matrix with time as the row and phase as the column.