To do list

* Peak to base ratio of us office building from clayton’s dataset

# Set the supply air temperature of AHU

1. Get input using *Schedule:File*

2. Set the setpoint to the corresponding node using *SetpointManager:Scheduled*

3. Calculate the setpoint of cooling coil, and heating coil outlet using *SetpointManager:Scheduled*

For CoilSystem:Cooling:DX and Coil:Heating:Fuel, it is done

For *Coil:Heating:Water* or *Coil:Cooling:water*

4. Calculate the flow rate of cooling and heating coil to satisfy the air outlet temperature using *Controller:WaterCoil*

5. Put the controls together into the object *AirLoopHVAC:ControllerList*

6. Put the controller list in the *AirLoopHVAC*

# Set the supply air flow rate of air terminal

Example: terminal = ConfRoom\_Mid\_1 ZN

1. delete thermostat: {terminal} Thermostat

* ZoneControl:Thermostat
* Schedule:Compact
* ScheduleTypeLimits

2. replace AirTerminal:SingleDuct:VAV:Reheat with AirTerminal:SingleDuct:Uncontrolled

* Add Schedule:Compact ALWAYSON
* Name ADU {terminal} VAV Terminal

3. revise ZoneHVAC:EquipmentList

* Equipment object type

4. delete ZoneHVAC:AirDistributionUnit and Coil:Heating:Electric (for reheat)

5. add input of the flow rate through Schedule:File object

6. use EnergyManagementSystem:Sensor to get the input value

7. add control point use EnergyManagementSystem:Actuator

8. add EnergyManagementSystem:Program to set the flow rate of {terminal}

9. add EnergyManagementSystem:ProgramCallingManager to specify where the EMS program is called

10. revise the node in AirLoopHVAC:ZoneSplitter

* For airterminal:singleduct:uncontrolled, there is only one node, no inlet and outlet nodes, therefore, replace the node number (inlet node) in AirLoopHVAC:ZoneSplitter with the air terminal outlet node directly

# Add reheat using

Example: terminal = ConfRoom\_Mid\_1 ZN

1. add input of reheat through Schedule:File object, name {terminal} Reheat

2. use EnergyManagementSystem:Sensor to get the input reheat value, name {terminal\_ZN}\_Reheat

3. use EnergyManagementSystem:Sensor to get the input occupant number, name {terminal\_ZN}\_Occ

4. use EnergyManagementSystem:Sensor to get the input occupant number, name {terminal\_ZN}\_ Equ

5. use EnergyManagementSystem:InternalVariable to get the max (design) value of equipment

6. use EnergyManagementSystem:Actuator to reset the equipment power

7. use AddingReheatToEquipment program to recalculate and reset the equipment power

AirTerminal:SingleDuct:VAV:Reheat -> ZoneHVAC:AirDistributionUnit -> ZoneHVAC:EquipmentList -> ZoneHVAC:EquipmentConnections

AirTerminal:SingleDuct:Uncontrolled -> ZoneHVAC:EquipmentList -> ZoneHVAC:EquipmentConnections (**没有ZoneHVAC:AirDistributionUnit**)

AirTerminal:SingleDuct:UserDefined

* Primary Air Connection
  + The inlet to the custom air terminal unit is a node that is also the outlet from an AirLoopHVAC:ZoneSplitter object
    - Internal variable
      * Inlet Temperature for Primary Air Connection
      * Inlet Humidity Ratio for Primary Air Connection
      * Inlet Density for Primary Air Connection
      * Inlet Specific Heat for Primary Air Connection
    - Actuator
      * Primary Air Connection
        + Inlet Mass Flow Rate
  + The outlet for the custom air terminal unit is a node that is also an inlet to the zone
    - Actuator
      * Primary Air Connection
        + Outlet Temperature
        + Outlet Humidity Ratio
        + Outlet Mass Flow Rate