GA

GC

GC   GC

HWS ▷ SV   SUD   GC

DV

SV

TH

Piping Sized for
Design Coil Flow

DV

CP

AV   GC

XXX
COIL
X GPM

GC   DV
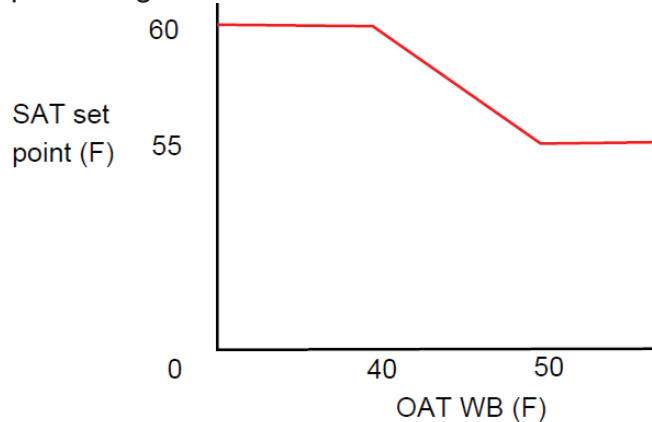
CP
TH

DV

AV

SV

MODULATING
CONTROL VALVE

SV
HWR

PREHEAT COIL CIRCULATING PUMP DETAIL

NO SCALE

Preheat Coil Circulating Pump (in Parallel) & Control Valve Sequence of Operation

1. AHU Supply Air Set-point Reset:
   - AHU supply air temperature set-point (AHUxSATSP) shall be reset based on outside air wet bulb temperature per the figure below.
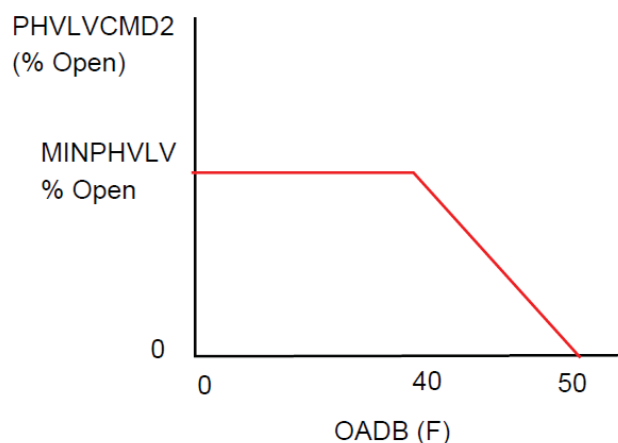

2. Preheat Coil Circulating Pump Start/Stop:
   - The preheat coil pump shall be commanded to run (PMPxSS = True) if the outdoor air temperature dry bulb temperature (OADB) is less than 50 degrees or the preheat coil control valve command (PHVLVCMD) is greater than 3% open.
   - The preheat coil pump shall be commanded to stop (PMPxSS = False) if the outdoor air dry bulb temperature (OADB) is above 53 degrees and the preheat coil valve command (PHVLVCMD) is less than 1% open.

3. Preheat Coil Control Valve Open Command:
   - The preheat coil valve open command (PHVLVCMD) shall be a maximum of two commands, PHVLVCMD1 and PHVLVCMD2.
   - The first command (PHVLVCMD1) shall be based on PID loop used to the control the AHU leaving air temperature to set-point.
   - The second command (PHVLVCMD2) shall be based on outdoor air temperature and a user adjustable threshold value (MINPHVLV). The default value of MINPHVLV shall be 20% open. PHVLVCMD2 shall be calculated as follows:

4. Preheat Coil Pump Fail to Run (FTR) Alarm:
   - If the preheat coil pump is commanded to run (PMPxSS = True) and the pump run status is false (PMPxST = False) for 90 seconds continuously, a fail to run alarm (PMPxFTR = True) shall be issued to the building automation system (BAS).