May 2010

Back 2 Basics

Solution

Based on Cx-3 ATC/FPT software

TAB Existing AHU-1

Measurement Point	Criteria	On 24/7 Max Cooling		On 24/7 Min Cooling		On 24/7 Max Heating		TAB Tester Questions
		Design	Actual	Design	Actual	Design	Actual	
1 Mixed air plenum	Flow Static pressure Velocity	7,000 cfm -0.25 in. sp 500 fpm	6,300 cfm -0.35 in. sp 450 fpm					A. OK per basis of design B. OA damper D-1 open 100% C. OA damper D-1 closed creating excess static pressure drop via excess return air (RA) **-ANSWER**
2 After filter and before supply air fan	Flow Static pressure Velocity	7,000 cfm -0.5 in. sp 500 fpm	6,300 cfm -0.45 in. sp 450 fpm					A. OK per basis of design B. Filter pressure drop excessive. Issue PM work-order to replace filters C. Filter pressure drop OK at reduced total cfm **-ANSWER**
3 After fan and before cooling coil	Flow Static pressure Velocity	7,000 cfm +1.50 in. sp 1,200 fpm	6,300 cfm +1.65 in. sp 1,080 fpm					A. OK per basis of design B. OK based on reduced total supply air **-ANSWER** C. Supply fan needs to be re-sheaved to increase cfm
4 After cooling coil and before reheat coil	Flow Static pressure Velocity	7,000 cfm +0.50 in. sp 400 fpm	6,300 cfm +0.50 in. sp 360 fpm					A. OK per basis of design B. OK based on reduced total supply air **-ANSWER** C. Coil pressure drop excessive. Issue PM workorder to clean coil
5 After reheat coil	Flow Static pressure Velocity	7,000 cfm +0.30 in. sp 600 fpm	6,300 cfm +0.35 in. sp 540 fpm					A. OK per basis of design B. OK based on reduced total supply air **-ANSWER** C. Coil pressure drop excessive. Issue PM workorder to clean coil
6 3/4 Downstream In supply air duct	Flow Static pressure Velocity	7,000 cfm -0.20 in. sp 1100 fpm	6,300 cfm -0.20 in. sp 990 fpm					A. OK per basis of design B. OK based on reduced total supply air **-ANSWER** C. Duct static pressure drop is excessive - Issue PM workorder to clean ductwork
7 CHWR downstream of three-way V-1 valve	Flow Head Temperature	48 gpm 30 ft 54°F	48 gpm 45 ft 44°F					A. OK per basis of design B. Excessive pump head from coil C. Coil is piped backwards **-ANSWER**
8 CHWS upstream of three-way V-1 valve	Flow Head Temperature	48 gpm 45 ft 44°F	48 gpm 30 ft 54°F					A. OK per basis of design B. Inadequate pump head to the coil C. Coil is piped backwards **-ANSWER**
9 HWR downstream of three-way V-2 valve	Flow Head Temperature	34 gpm 30 ft 180°F	0 gpm 35 ft 190°F					A. OK per basis of design B. Valve to reheat coil is closed per design sequence **-ANSWER** C. Coil is piped backwards