



EXAMPLE:

COMMISSIONING
FUNCTIONAL CHECKLIST (FC)

Example FC

Commissioning Functional Checklist (FC)

Sys./Equip.: AHU-1

Project: Client Job Name

ETOP #: IPS-000001-001

Date: 3/6/2007

Rev. #: 00

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Signature Log: All individuals participating in the execution of this commissioning checklist shall record the pertinent information as indicated in the table below.

Name (Print)	Name (Signature)	Company Name	Initials (As they Appear in the Checklist)

PFC Item # ----- Sys./Equip./ Instru. ID#	Commissioning Procedure	Actual or Additional Information / Comments	Verified By (Initial / Date)
1. AHU-1.	Verify that the associated Pre-functional Checklist (PFC) for this ETOP has been completed, or that any remaining / outstanding PFC items will not adversely affect the commencement of this FC.	PFC Status is Acceptable: Yes No	
2. AHU-1	Immediately prior to the execution of this FC, Verify the Status of the Construction of the ETOP's Equipment/System/Utility: <input type="checkbox"/> Mechanically complete <input type="checkbox"/> Construction open items, if any, do not adversely impact FC commencement; <input type="checkbox"/> Unit is safe to operate.	Identify Verification Method used: <input type="checkbox"/> Field Verification (FV) <input type="checkbox"/> Document Verification (DV) For DV, identify Verification Source: _____ Construction Status is Acceptable: Yes No	

Comments:

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3. AHU-1	Immediately prior to the execution of this FC, Confirm that this ETOP's utilities & support systems are available for use. For new utilities/support systems, ensure they have been commissioned, as required.	Reviewed for availability: <input type="checkbox"/> Electric <input type="checkbox"/> Coil Condensate Drain <input type="checkbox"/> Bldg Mgmt Sys. (BMS) <input type="checkbox"/> Fire Alarm Sys. ETOP Status is Acceptable: Yes No	
4. AHU-1	Review the BAS submittal to verify that the BAS programming includes the time schedule for occupied and un-occupied modes, warm-up, cool-down, safeties and economizer modes. Verify the control logic will all for space pressurization and VFD fan control.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
5. AHU-1	Verify that the VFD for each fan is energized, operational and any vendor provided programming has been completed. Verify all lights and PLC screens are operational.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
6. AHU-1	Review vendor startup of air conditioning unit. Review vendor start-up checks when provided. Provide copy of report in this document.	Verification Method: FV DV Verification Source: _____ Acceptable: Yes No	
7. AHU-1	Verify that the air handler can start and stop via the unit controls and BAS. Verify the unit can be started manually via the VFD.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
8. AHU-1	Verify the rotation of the fan. Verify there is no unusual vibration or noise and the fan is rotating per IO&M documents and unit markings.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	

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9. AHU-1	Review full load running amps for the supply fan motor and verify that the nameplate FLA is not being exceeded. See start-up or balancing report.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
10. AHU-1	Review the operation of the differential pressure sensor and gauge across the filters. Verify the match the recorded pressure drop via the TAB contractor. See start-up or balancing report.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
11. AHU-1	Verify the chilled water and hot water control valves stroke thru the full range and the span matches the BAS ranges.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
12. AHU-1	Warm-up Mode. Verify the fans start when the unit is placed in the warm-up mode. Verify that mixed air damper is set to 100% return and the electric heating is enabled to maintain the supply air temperature. If time "latest start time" is reached during warn-up verify OA damper goes to minimum position.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
13. AHU-1	Cool down Mode. Verify the fans starts when the unit is placed in the cool down mode. Verify that mixed air damper, the cooling and heating are enabled to maintain the supply air temperature. Verify economizer operation is disabled if the OA dry bulb is above the economizer changeover setting. If time "latest start time" is reached during warn-up verify OA damper goes to minimum position	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	

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14. AHU-1	Occupied Mode. Place the unit in the occupied mode. Verify the fans start or continue to run when the unit is placed in the occupied mode. Verify that when the outside air enthalpy is less than the return enthalpy the unit will initialize the economizer mode. Verify the damper, heating coil, and cooling coil modulates to maintain the temperature set point. Verify the system will maintain the supply air temperature minimum temperature set point (48F).	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
15. AHU-1	Occupied Mode. Place the unit in the occupied mode. Verify the fans start or continue to run when the unit is placed in the occupied mode. Verify that when the outside air enthalpy is greater than the return enthalpy the unit will disable the economizer mode. Verify the OA damper modulates to the minimum position. Verify the BAS will stage the heating or cooling as required to maintain the supply air temperature of (49F).	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
16. AHU-1	Occupied Mode. Static pressure control. Place the unit in the occupied mode. Verify the supply fan VFD modulates to maintain 1.5" SP. Verify the return VFD modulates to maintain a cfm differential offset from the supply fan. If the OA damper is closed the offset is 0%. Verify VFD ramp speed is between 60 and 120 seconds.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	

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17. AHU-1	Un-Occupied Mode. Place the unit in the un-occupied mode. Verify that the system fans modulate to minimum cfm and the mixed air damper is closed to OA. If the OA temp is less than 45F the heating coil valve modulated to maintain mixed air set point.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
18. AHU-1	Night Heating Mode. Verify the fans start when the unit is placed in the night heating mode. Verify heating is enabled to maintain the supply air temperature (65F). Verify mixed air damper is closed to OA and cooling mode is off.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
19. AHU-1	Safeties: Verify that the air handler and return fan will stop and the mixed air damper shuts when any duct- mounted smoke detectors are activated. Verify that the FACP will alarm. Verify that the unit will not start until the alarm condition has been cleared.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
20. AHU-1	Safeties: Verify that the air handler and return will stop and the mixed air damper shuts when the mixed air low temperature (freeze-stat) sensor is activated. Verify that the unit will not start until the alarm condition has been cleared.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	
21. AHU-1	Safeties: Verify that the air handler will stop and the mixed air damper shuts when the high duct static pressure transmitter is activated. Verify that the unit will not start until the alarm condition has been cleared.	Verification Method: FV DV Verification Source: _____ Operation Acceptable: Yes No	

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22. AHU-1	<p>Safeties:</p> <p>Verify that the air handler will stop and the mixed damper shuts when the loss of status is activated via the current switch. Verify that the unit will not start until the alarm condition has been cleared</p>	<p>Verification Method: FV DV</p> <p>Verification Source: _____</p> <p>Operation Acceptable: Yes No</p>	
23. AHU-1	<p>Verify that the air handler has been balanced within 10% of the design airflow. Insert a copy of the balance report in the document.</p>	<p>Verification Method: FV DV</p> <p>Verification Source: _____</p> <p>Balancing Acceptable: Yes No</p>	
24. AHU-1	<p>Verify a manufacturers authorized representative has conducted training on the unit and BAS System. Attach the attendee's list to the checklist.</p>	<p>Verification Method: FV DV</p> <p>Verification Source: _____</p> <p>Training Acceptable: Yes No</p>	

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